DRAFT DATE: 30 OCT, 2002

NAD

SERVICE MANUAL

T 562

DVD / VCD / CD
PLAYER

T 562

DVD / VCD / CD
PLAYER

SECTION 1
SUMMARY

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PRPDUCT SAFETY SERVICING GUIDELINES FOR VIDEO PRODUCTS

CAUTION: DO NOT ATTEMPT TO MODIFY THIS PRODUCT IN ANYWAY. NEVER PERFORM CUSTOMINIZED INSTALLATIONS WITHOUT MANUFACTURER'S APPROVAL. UNAUTHORIZED MODIFICATIONS WILL NOT ONLY VOID THE WARRANTY, BUT MAY LEAD TO YOUR BEING LIABLE FOR ANY RESULTING PROPERTY DAMAGE OR USER INURY.

SERVICE WORK SHOULD BE PERFORMED ONLY AFTER YOU ARE THOROUGHLY FAMILIAR WITH ALL OF THE FOLOWING SAFETY CHECKS AND SERVICING GUIDELINS. TO DO OTHERWISE, INCREASES THE RISK OF POTENTIAL HAZARDS AND INJURY TO THE USER.

WHILE SERVICING, USE AN ISOLATION TRANSFORMER FOR PROTECTION FROM A.C. LINE SHOCK.

SAFETY CHECKS

AFTER THE ORIGINAL SERVICE PROBLEM HAS BEEN CORRCTED, A CHECK SHOULD BE MADE OF THE FOLLOWING.

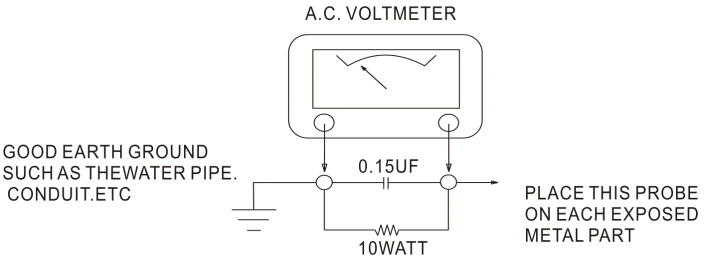
SUBJECT: FIRE &SHOCK HAZARD

1. BE SURE THAT ALL COMPONENTS ARE POSITIONED IN SUCH A WAY AS TO AVOID POSSIBILITY OF ADJACENT COMPONET SHORTS. THIS IS ESPECIALLY IMPORTANT ON THOSE MODULES WHICH ARE TRANSPORTED TO AND FROM THE REPAIR SHOP.
2. NEVER RELEASE A REPAIR UNLESS ALL PROTECTIVE DEVICES SUCH AS INSULATORS, BARRIERS, COVERS, SHIELDS, STRAIN RELIEFS, POWER SUPPLY CORDS, AND OTHER HARDWARE HAVE BEEN REINSTALLED PERORIGINAL DESIGN. BE SURE THAT THE SAFETY PURPOSE OF THE POLARIZED LINE PLUG HAS NOT BEEN DEFEATED.
3. SOLDERING MUST BE INSPECTED TO DISVCOVER POSSIBLE COLD SOLDER JOINTS, SOLDER SPLASHES OR SHARP SOLDER POINTS. BE CERTAIN TO REMOVE ALL LOOSE FOREIGN PARTICLES.
4. CHECK FOR PHYSICAL EVIDENCE OF DAMAGE OR DETERRIORATION TO PARTS AND COMPONENTS. FOR FRAYED LEADS, DAMAGED INSULATION (INCLUDING A.C. CORD).AND REPLACE IF NECESSARY FOLLOW ORIGINAL LAYOUT, LEAD LENGTH AND DRESS.
5. NO LEAD OR COMPONENT SHOULD TOUCH A RECIVING TUBE OR A RESISTOR RATED AT 1 WATT OR MORE. LEAD TENSION AROUD PROTRUNING METAL SURFACES MUST BE AVOIDED.
6. ALL CRITICAL COMPONENTS SUCH AS FUSES, FLAMEPRO OF RESISTORS, CAPAICTORS, ETC. MUST BE REPLACED WITH EXACT FACTORY TYPES. DO NOT USE REPLACEMENT COMPONETS OTHER THAN THOSE SPECIFIED OR MAKE UNRECOMMENDED CIRCUIT MODIFICATIONS.
7. AFTER RE-ASSEMBLY OF THE SET ALWAYS PERFORM AN A.C. LEAKAGE TEST ON ALL EXPOSED METALLIC PARTS OF THE CABINET, (THE CHANNEL SELECTOR KNOB, ANTENNA TERMINALS. HANDLE ADN SCREWS) TO BE SURE THE SET IS SAFET TO OPERATE WITHOUT DANGER OF ELECTRICAL SHOCK. DO NOT USE A LINE ISOLATION TRANSFORMER DURING THIS TEST USE AN A.C. VOLTMETER, HAVING 5000 OHMS PER VOLT OR MORE SENSITIVITY, IN THE FOLLOWING MANNER; CONNECT A 1500OHM 10 WATT RESISTOR, PARALLELED BY A. 15 MFD, 150.V A.C. TYPE CAPACITOR BETWEEN A KNOWN GOOD EARTH GROUND (WATER PIPE, CONDUIT, ETC.) AND THE EXPPOSED METALLIC PARTS, ONE AT A TIME.

MEASURE THE A.C. VOLTAGE ACROSS THE COMBINATION OF 1500 OHM RESISTOR AND .15 MFD CAPACITOR.

REVERSE THE A.C. PLUG AND REPEAT A. C. VOLTAGE MEASUREMENTS FOR EACH EXPOSED METALLIC PART.

VOLTAGE MEASURE MUST NOT EXCEED 75 VOLTS R.M.S. THIS CORRESPONDS TO 0.5 MILLIAMP A.C. ANY VALUE EXCEEDING THIS LIMIT CONSTITUTED A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED IMMEDIATELY.



SUBJECT: GRAPHIC SYMBOLS

THE LIGHTNING FASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFCIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK.

THE EXCELAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

SUBJECT: TIPS ON PROPER INSTALLATION

1. NEVER INSTALL ANY PRODUCT IN A CLOSED-IN RECESS, CUBBYHOLE OR CLOSELY FITTING SHELF SPACE. OVER OR CLOSE TO HEAT DUCT, OR IN THE PATH OF HEATED AIR FLOW.
2. AVOID CONDITIONS OF HIGH HUMIDITY SUCH AS: OUTDOOR PATIO INSTALLATIONS WHERE DEW IS A FACTOR, NEAR STEAM RADIATORS WHERE STEAM LEAKAGE IS FACTOR, ETC.
3. AVOID PALCEMNET WHERE DRAPERIES MAY OBSTRUCT REAR VENTING. THE CUSTOMER SHOULD ALSO AVOID THE USE OF DECORATIVE SCARVES OR OTHER COVERINGS WHICH MIGHT OBSTRUCT VENTILATION.
4. WALL AND SHELF MOUNTED INSTALLATIONS USING A COMMERCIAL MOUNTING KIT. MUST FOLLOW THE FACTORY APPROVED MOUNTING INSTRUCTIONS A PRODUCT MOUNTED TO A SHELF OR PLATFORM MUST RETAIN ITS ORIGINAL FEET (OR THE EQUIVALENT THICKNESS IN SPACERS) TO PROVIDE ADEQUATE AIP FLOW ACROSS THE BOTTOM, BOLTS OR SCREWS USED FOR FASTENERS MUST NOT TOUCH ANY PARTS OR WIRING. PERFORM LEAKAGE TEST ON CUSTOMIZED INSTALLATIONS.
5. CAUTION CUSTOMERS AGNINST THE MOUNTING OF A PRDUCT ON SLOPING SHELF OR TILTED POSITION, UNLESS THE PRODUCT IS PROPERLY SECURED.
6. A PRODUCT ON A ROLL-ABOUT CART SHOULD BE STABLE ON ITS MOUNTING TO THE CART. CAUTION THE CUSTOMER ON THE HAZARDS OF TRYING TO ROLL A CART WITH SMALL CASTERS ACROSS THRESHOLDS OR DEEP POLE CARPETS.
7. CAUTION CUSTOMERS AGAINST THE USE OF A CART OR STAAND WHICH HAS NOT BEEN LISTED BY UNDERWRITERS LABORATORIES, INC. FOR USE WITH THEIR SPECIFIC MODEL OF THELVISION RECEIVER OR GENERICALLY APPROVED FOR USE WITH T.V.'S OF THE SAME OR LARGER SCREEEN SIZE.
8. CAUTION CUSTOMERS AGAINST THE USE OF EXTENSION CORDS, EXPLAIN THAT A FOREST OF EXTENSIONS SPROUTING FROM A SINGAL OUTLET CAN LEAD TO DISASTROUS CONSEQUENCES TO HOME AND FAMILY.

SERVICING PRECAUTIONS

CAUTION:

Before servicing the DVD player covered by this service data and its supplements and addends, read and follow the SAFETY PRECAUTIONS. NOTE: if unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions in this publications, always follow the safety precautions.

Remembers Safety First:

General Servicing Precautions

1. Always unplug the DVD player AC power cord from the AC power source before:
   (1) Removing or reinstalling any component, circuit board, module, or any other assembly.
   (2) Disconnection or reconnecting any internal electrical plug or other electrical connection.
   (3) Connection a test substitute in parallel with an electrolytic capacitor.

Caution**:** A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this DVD player or any of its assemblies.
3. Unless specified otherwise in this service data, clean electrical contacts by applying an appropriate contact cleaning solution to the contacts with a pipe cleaner, cottontipped swab, or comparable soft applicator.

Unless specified otherwise in this service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.
5. Do not apply AC power to this DVD player and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
6. Always connect test instrument ground lead to the appropriate ground before connection the test instrument positive lead. Always remove the test instrument ground lead last.

Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power on. Connect an insulation resistance meter (500V) to the blade of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (Note 1) should be more than 1M-ohm.

Note 1: Accessible Conductive Parts including Metal panels, Input terminals, Earphone jacks, etc.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical Es devices are integrated circuits and some field effect transistors and semiconductor chip components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handing any semiconductor component or semiconductor equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such an aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified an “antistatic” can generate electric charges sufficient to damage ES devices.
5. Do not use freonpropelled chemicals. These can generate electrical charge sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protect tive package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil, or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handing unpackaged replacement ES devices. (Normally harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

SPECIFICATIONS

DVD VIDEO PLAYER

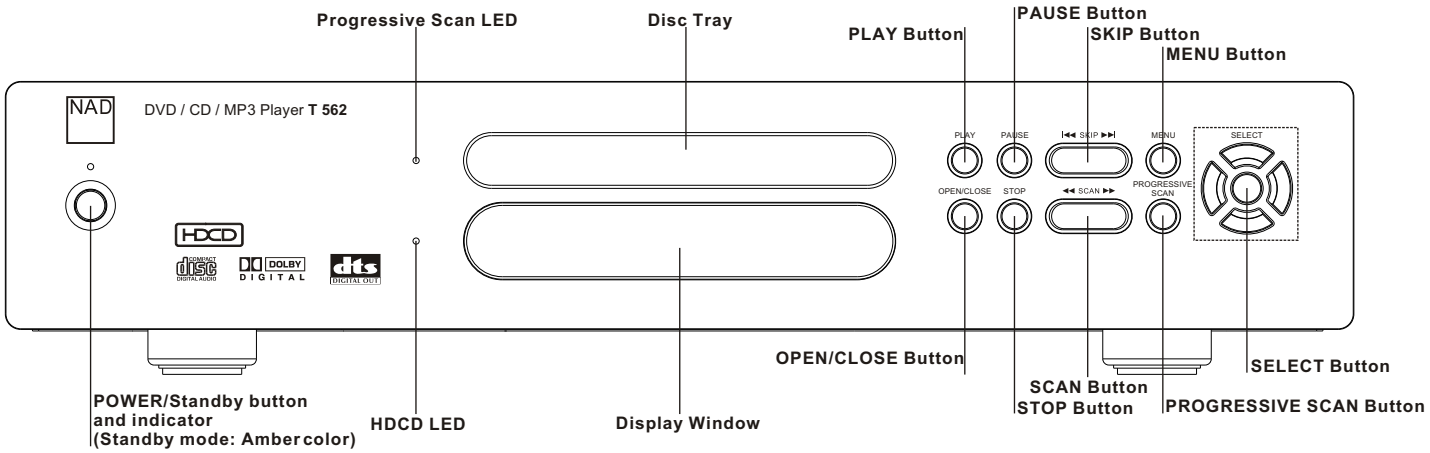
POWER SUPPLY	**AC 230V,50Hz (EUR)/120V,60Hz(US/CANADA)**
Power consumption	**30W**
External dimensions	**435×80×280mm**
Weight (net)	**4.6kg**
Signal system	**PAL (EUR)/NTSC (USA/CANADA)**
Laser	**Semiconductor laser, wavelength 650nm**
Frequency range(digital audio)	**2Hz to 22kHz**
Signal-to-noise	**More than 102dB(A-WEIGHTED)**
Audio dynamic	**More than 92dB**
Harmonic distortion	**0.008%**
Operating conditions	**Temperature: 41° to 95°, operation status: Horizontal**

OUTPUTS

Video output	**1.0V (p-p), 75Ù, negative sync., RCA jack×1**
S-video output	**(Y) 1.0V (P-P), 75Ù,negative sync., Mini DIN 4pin×1**
	(C) 0.286V (P-P), 75Ù
Component Video output	**(Y)1.0V (P-P), 75Ù,negative sync.,**
	(Cb、Cr) 0.5V (P-P), 75Ù
Scart Video output	**(CVBS)1.0V(P-P) ,75Ù,negative sync.,**
	(R、G、B)0.7V(P-P),75Ù
Audio output(digital audio)	**0.5V(p-p) 75Ù, RCA jack×1**
Audio output(analog audio)	**2.0Vrms(1kHz, 0dB), RCA jack×1**

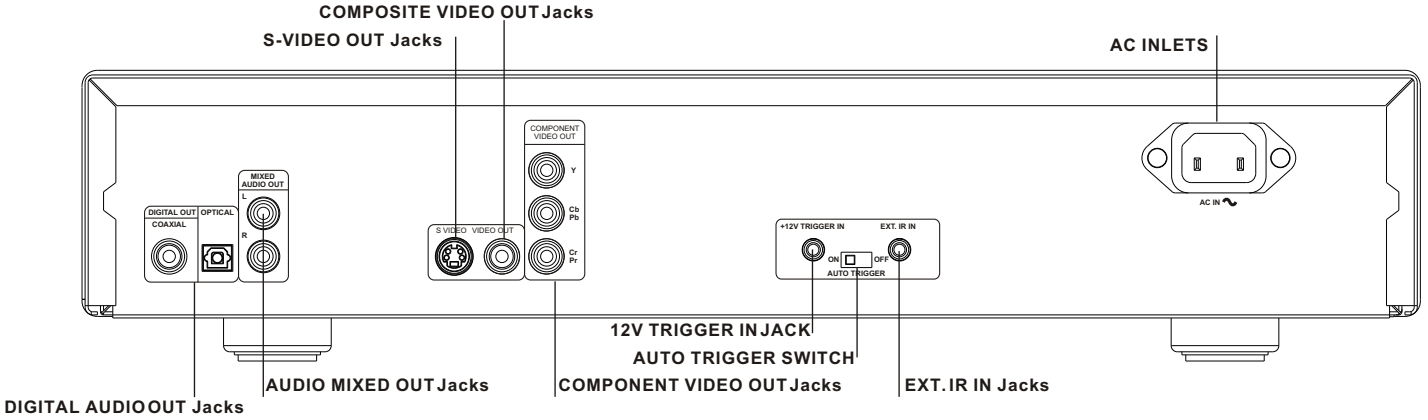
LOCATION OF CUSTOMER CONTROLS

FRONT PANEL

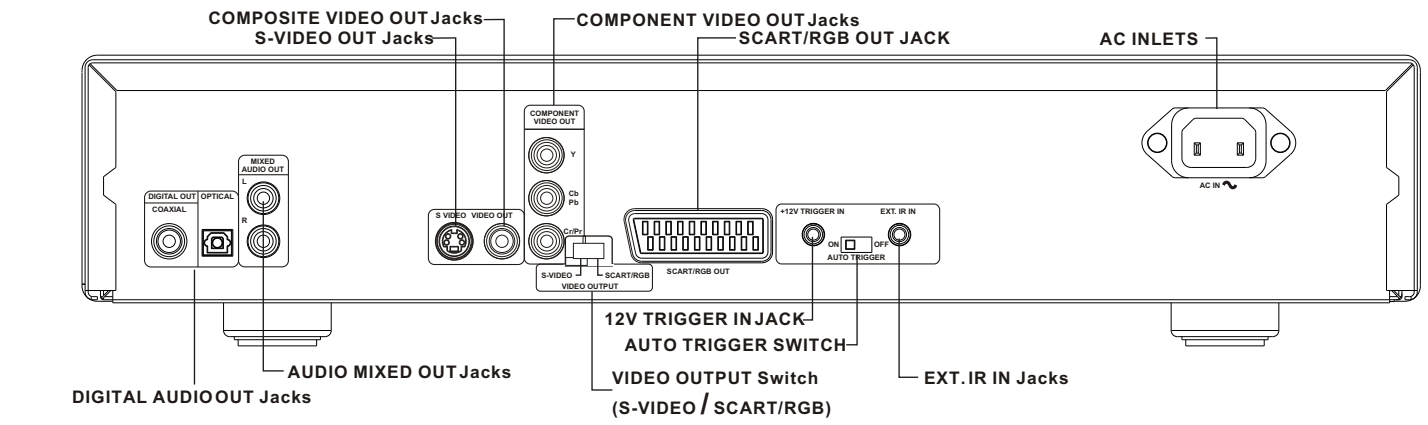


REAR PANEL

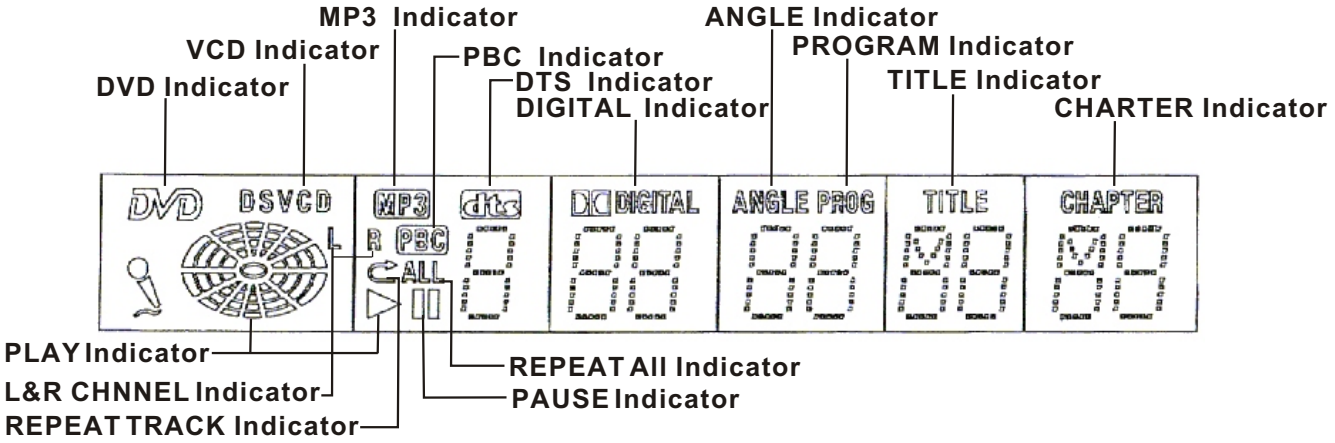
AH VERSION (US/CANADA)



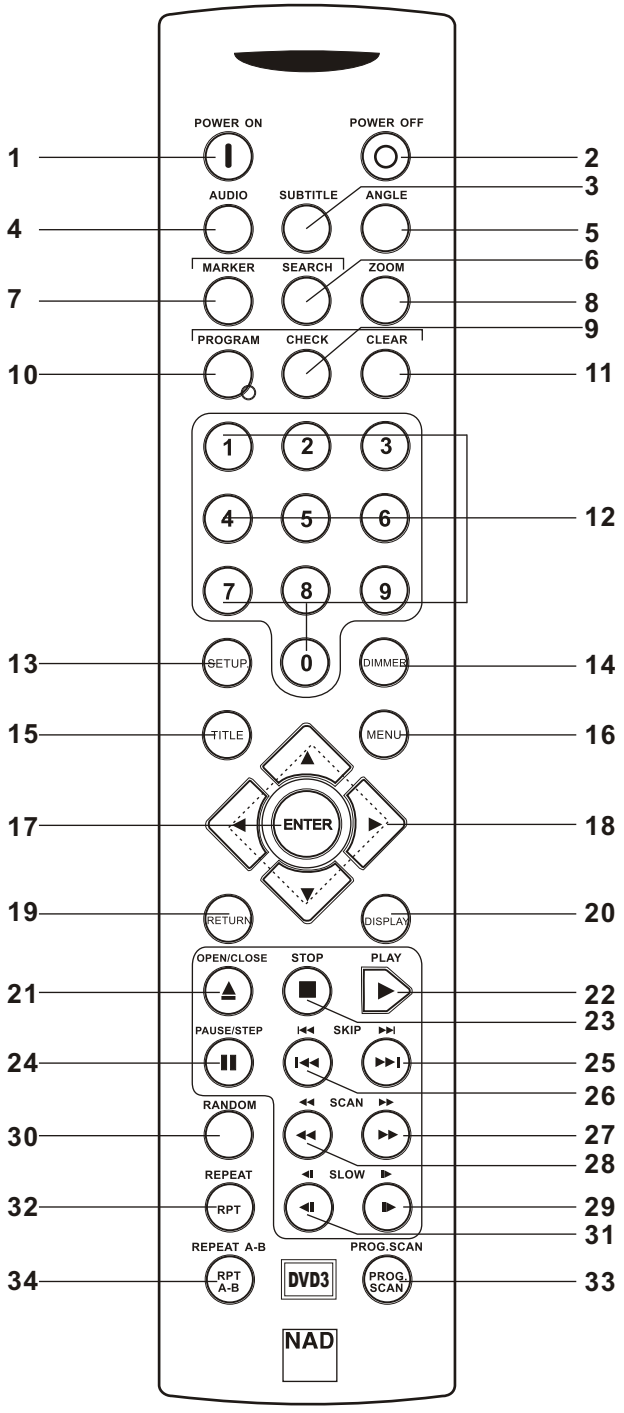
C VERSION (EUROPEAN)



DISPLAY WINDOW

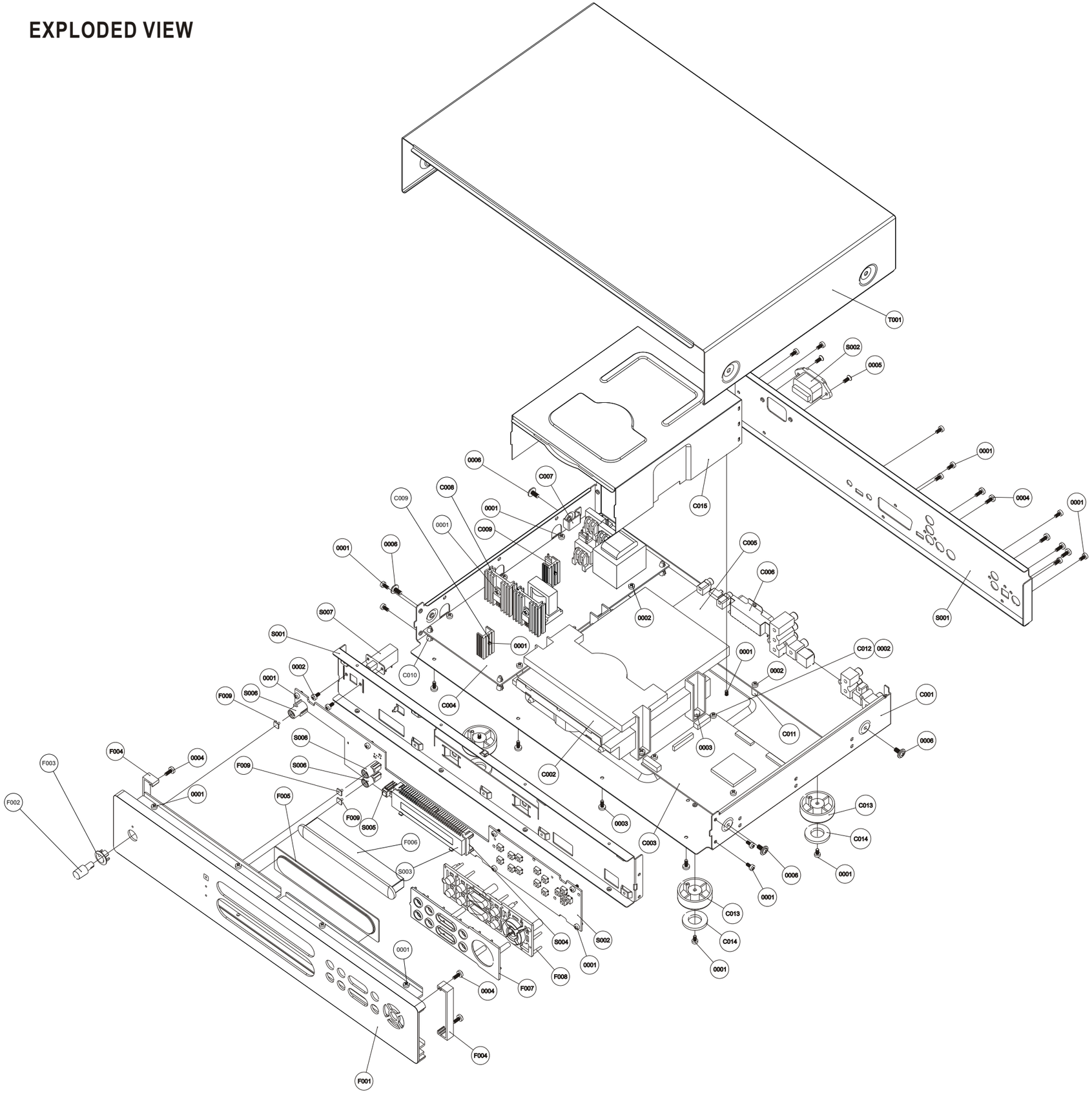


REMOTE CONTROL



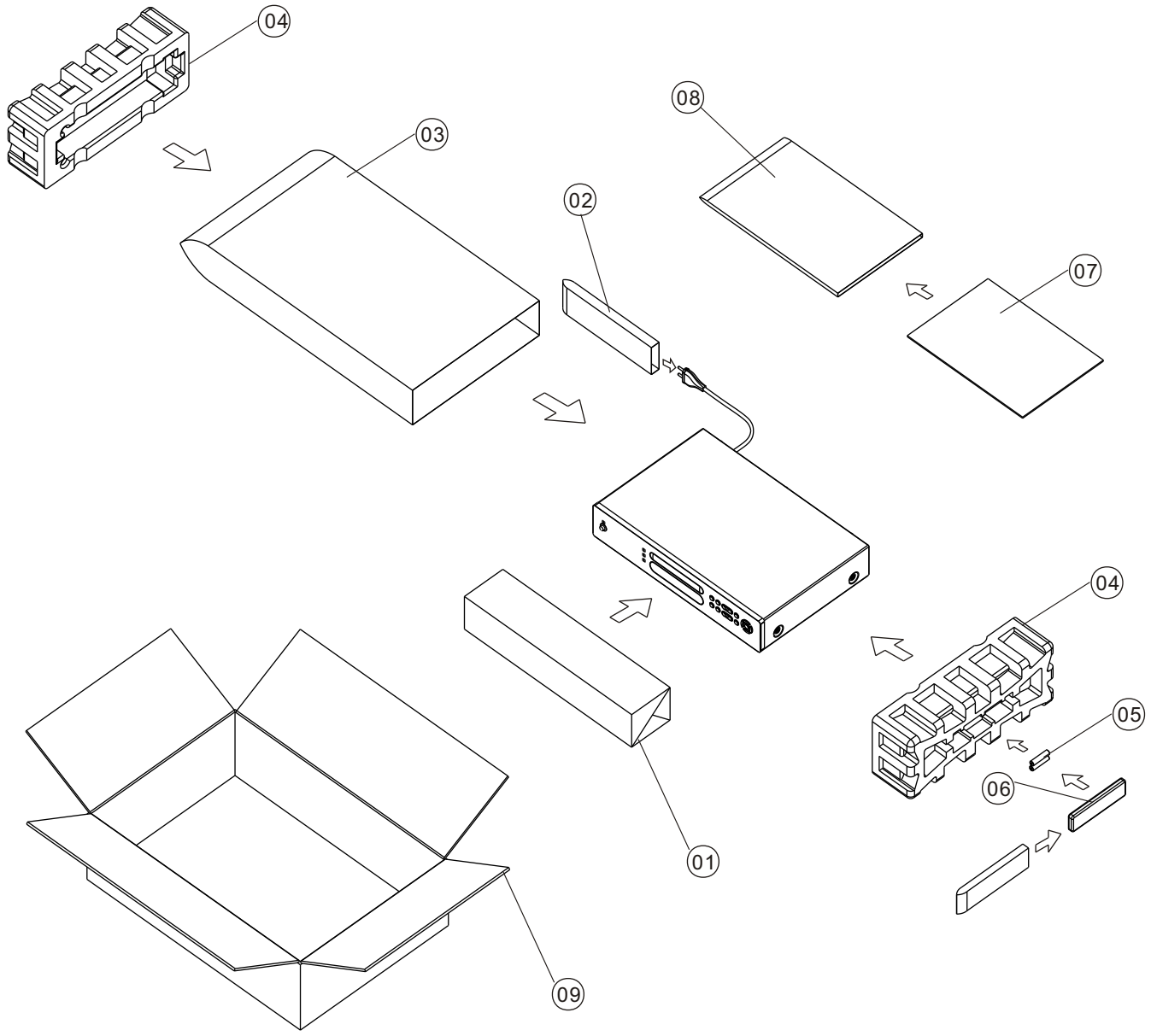
1.POWER ON Button
2.POWER OFF Button
3.SUBTITLE Button
4.AUDIO Button
5.ANGLE Button
6.SEARCH Button
7.MARKER Button
8.ZOOM Button
9.CHECK Button
10.PROGRAM Button
11.CLEAR Button
12.NUMERIC Buttons
13.SETUP Button
14.DIMMER Button
15.TITLE Button
16.MENU Button
17.ENTER Button
18.ARROW Buttons
19.RETURN Button
20.DISPLAY Button
21.OPEN/CLOSE Button
22.STOP Button
23.PLAY Button
24.PAUSE/STEPButton
25.REV SKIP Button
26.FWD SKIP Button
27.REV SCAN Button
28.FWD SCAN Button
29.REW SLOW Button
30.RANDOM Button
31.FWD SLOW Button
32.REPEAT Button
33.PROGRESSIVE SCAN Button
34.REPEAT A-B Button

EXPLODED VIEW



	REF. NO.	PART NO.	DESCRIPTION	Qty.
	F001	67-009001-0	Fascia (C Version)	1
		67-009002-0	Fascia (AH Version)	1
	F002	77-009003-0	Power Button	1
	F003	77-001007-0	Power Button Bezel	1
	F004	66-009007-0	End Cap	2
	F005	76-009001-0	Window	1
	F006	77-009002-0	CD Door	1
	F007	75-009001-0	Cursor Button Bezel	1
	F008	77-009001-0	Cursor Button	1
	F009	76-003001-0	LED Lens	3
				1
	S001	66-009006-0	Subfascia 2	1
	S002	16-56003-00	Key Control PCB	1
	S003	23-56119-00	VFD	1
	S004	75-009003-0	VFL Housing	1
	S005	66-009011-0	IR Bracket	1
	S006	75-009002-0	Sleeve(1P)	3
⚠	S007	11-01201-01	Power Switch	1
	C001	66-009001-0	Chassis	1
	C002	36-00021-00	Mechanism	1
⚠	C003	16-56002-00	Decoder PCB	1
⚠	C004	16-56004-00	Power Supply PCB	1
	C005	16-56001-00	Audio PCB	1
	C006	17-10021-00	Scart Connector(C Vertion)	1
	C007	66-009010-0	Stopper	1
	C008	70-009002-0	Heatsink 1	3
	C009	70-009001-0	Heatsink 2	1
	C010	85-009001-0	PCB Spacer	4
	C011	69-009001-0	Spacer Support 1	7
	C012	69-009002-0	Spacer Support 2	2
	C013	75-001008-0	Foot	4
	C014	86-001001-0	Rubber Pad	2
	C015	66-009009-1	Mechanism Cover	1
				1
	R001	66-009003-1	Rear Panel (C Vertion)	1
		66-009004-1	Rear Panel (AH Vertion)	1
⚠	R002	17-07002-00	AC Inlet	1
		or 17-07002-02	AC Inlet	1
	T001	66-009002-0	Top Cover	1
	0001	61-023106-0	STB3x6 Screw	34
	0002	61-023506-2	MB3x6-Ni Screw	11
	0003	61-083108-0	STPW3x8 Screw	4
	0004	61-023208-0	BTB3x8 Screw	6
	0005	61-073108-0	STO3x8 Screw	2
	0006	61-084108-0	STPW4x8 Screw	4

PACKING DIAGRAM



Ref. No.	Part No.	Description	Q'TY
01.	90-002001-0	EPE Fascia Cover	1
02.	90-001003-0	AC Cord Polybag	1
03.	90-001001-0	Polybag	1
04.	89-002001-0	Polyfoam End Cap	2
05.	30-23200-00	Batteries	2
06.	30-15600-00	Remote Control	1
07.	30-45600-01	IM 1(Eng. Starts)l	1
	30-45600-02	IM 2(Spa. Starts)	1
08.	90-009001-1	Manual Polybag	1
09.	88-009001-0	Carton Box C Version	1
	88-009002-0	Carton Box AH Version	1

Proprietary information for servicing purposes only.
The information herein may not be used commercially without the prior written agreement of NAD International, Toronto, Canada.

SECTION 2
ELECTRICAL CONTENTS

CONTENTS

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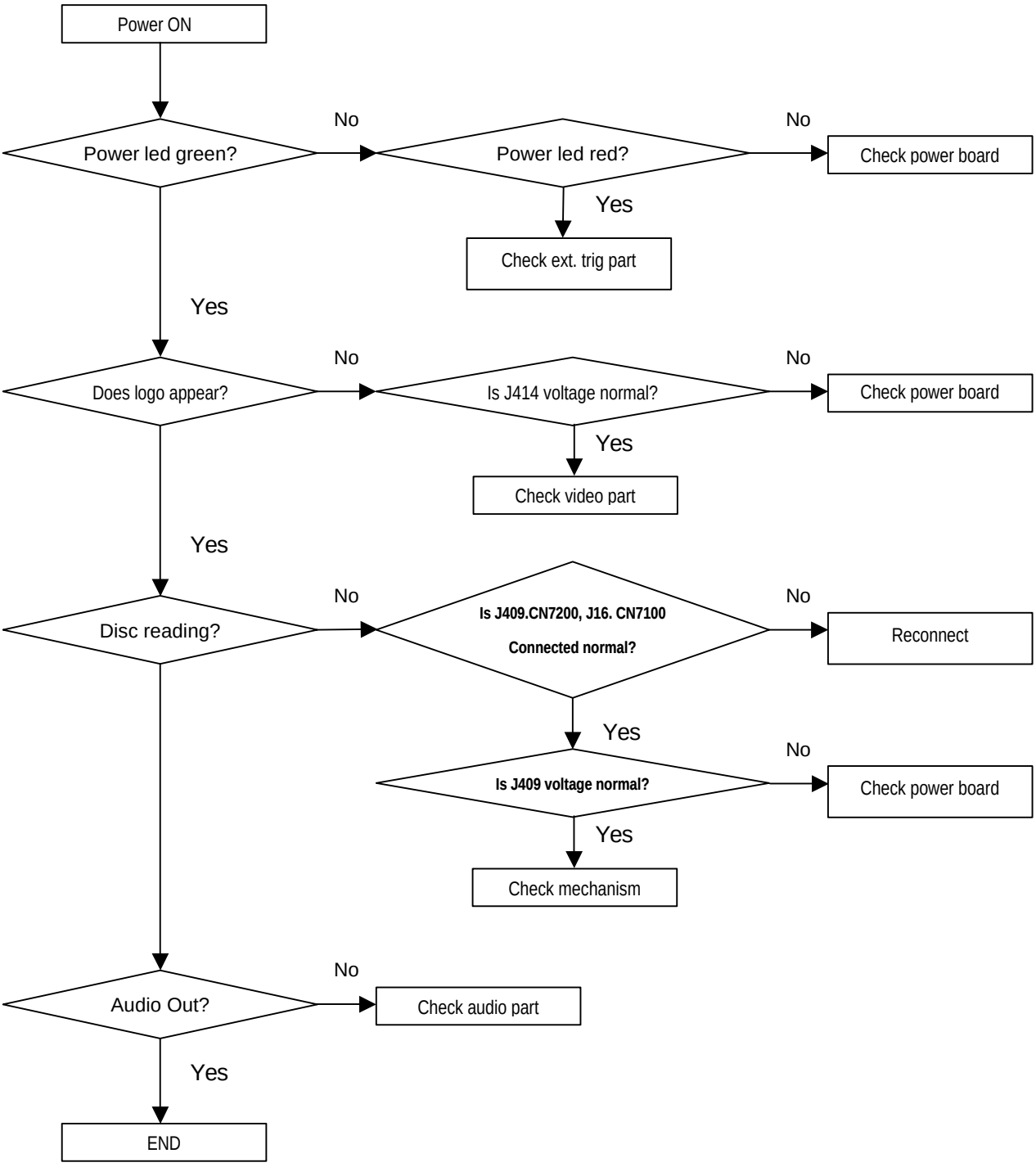
   - POWER SUPPLY PCB BOTTOM SIDE
   - FRONT PCB TOP & BOTTOM SIDE
   - DECODE PCB TOP&BOTTOM SIDE
   - AUD PCB TOP&BOTTOM SIDE

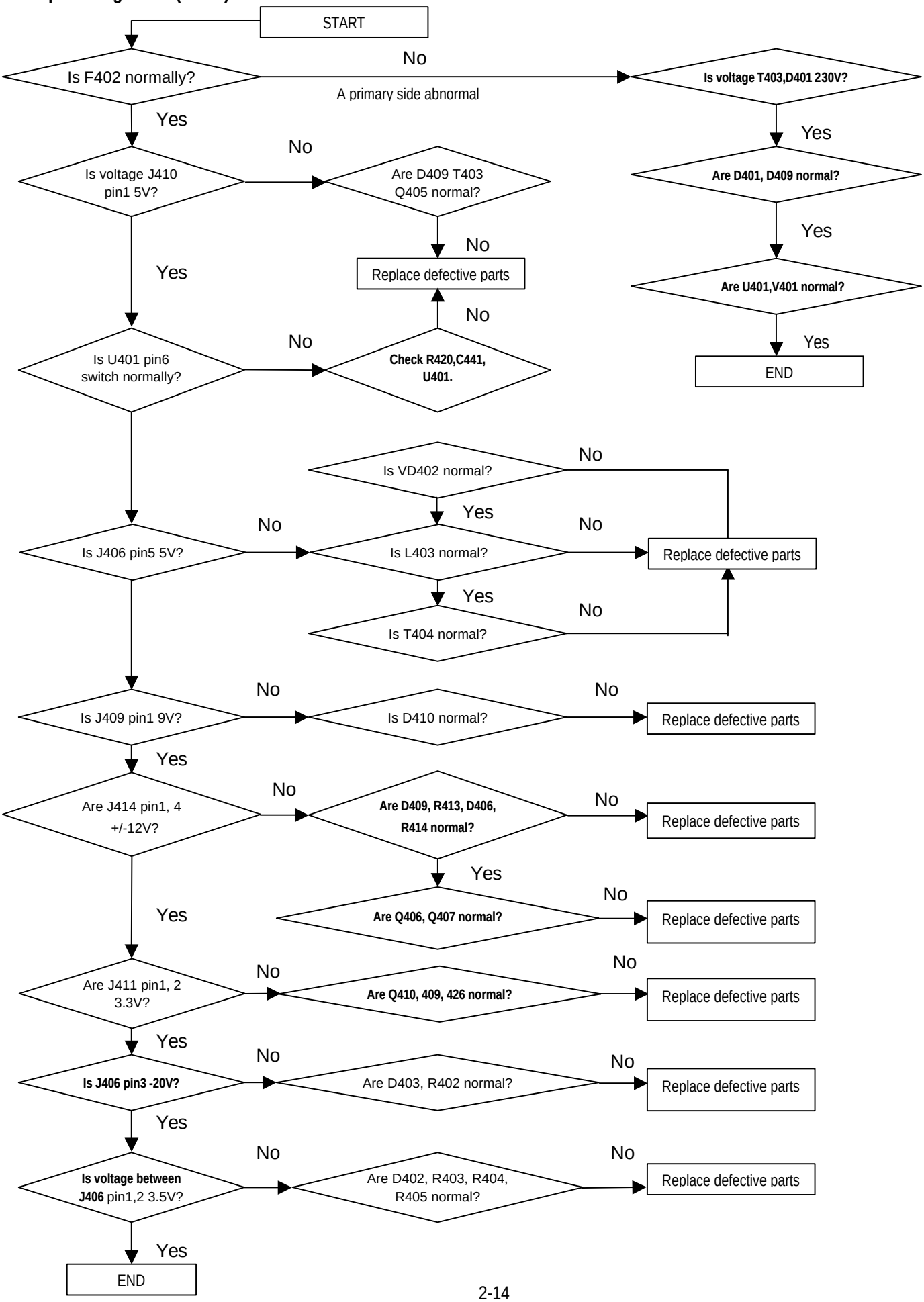
ELECTRICAL TROUBLESHOOTING GUIDE

1. SYSTEM CHECK

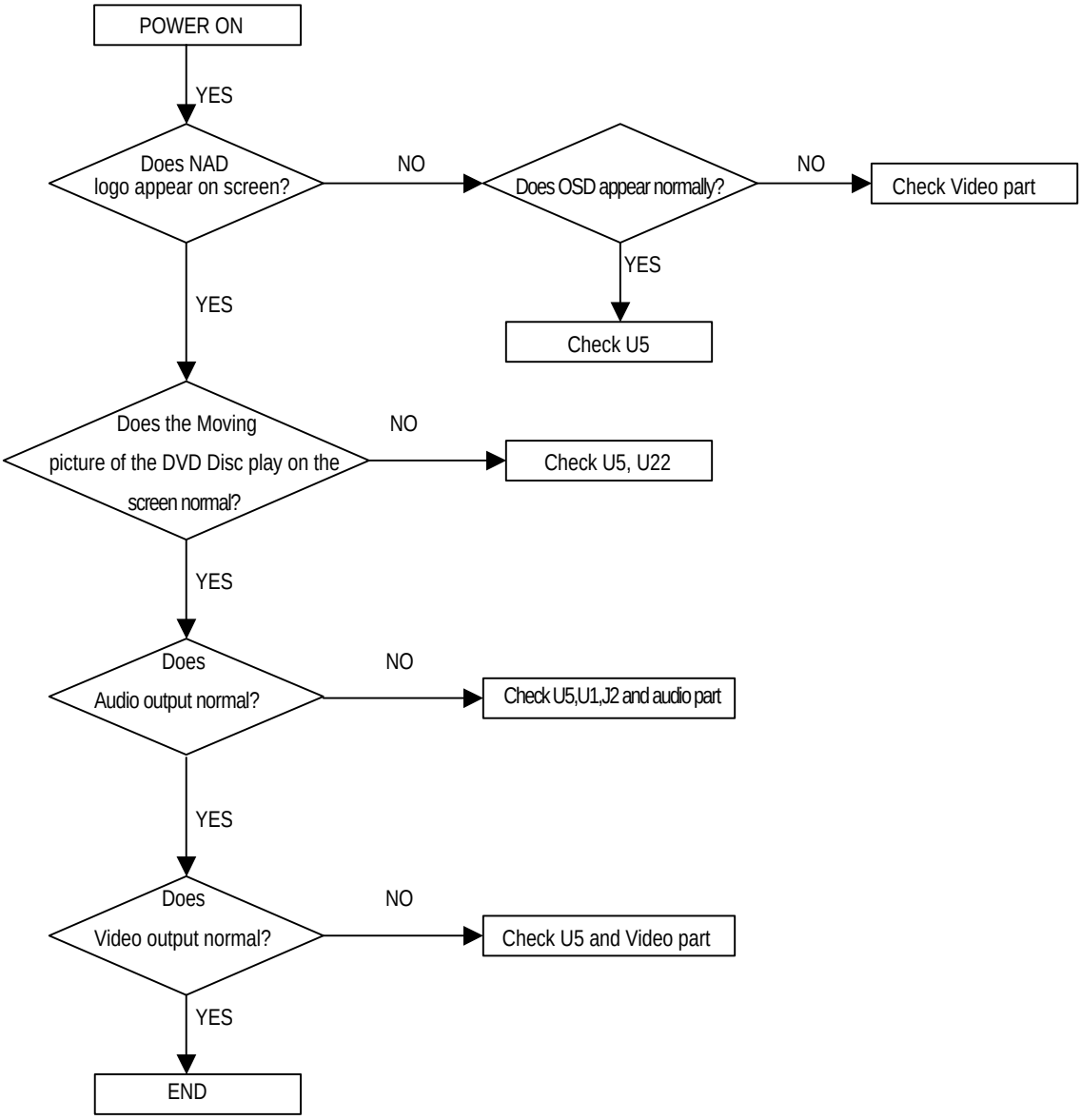


2. POWER CIRCUIT

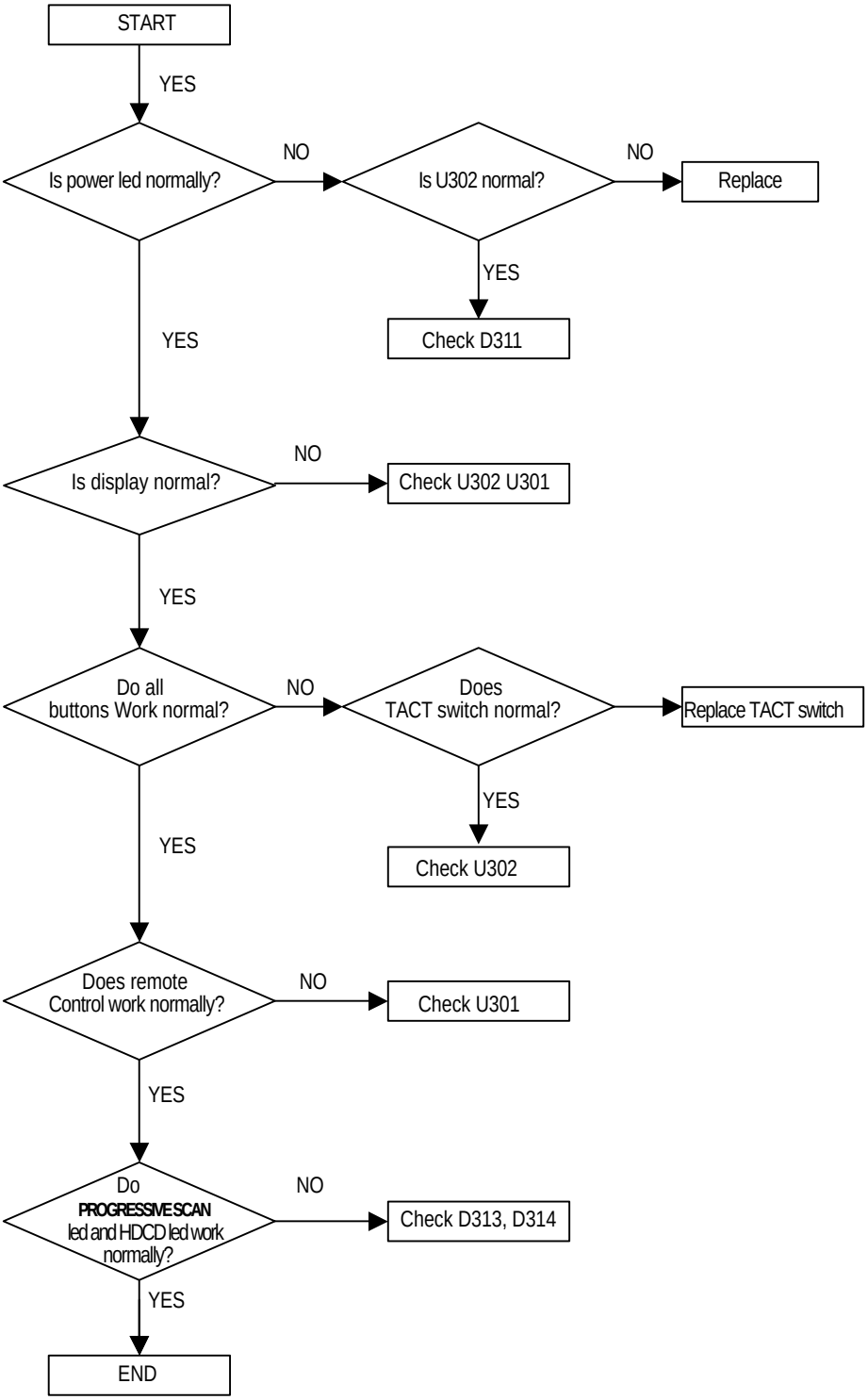
Input voltage 230V (C.Ver.)



3. DECODE CIRCUIT

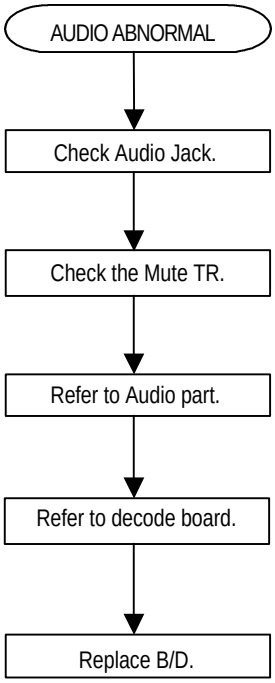


4. FRONT CIRCUIT

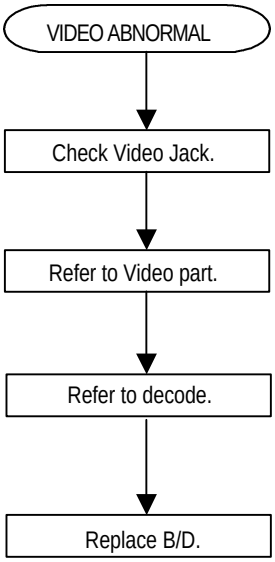


5. ETC

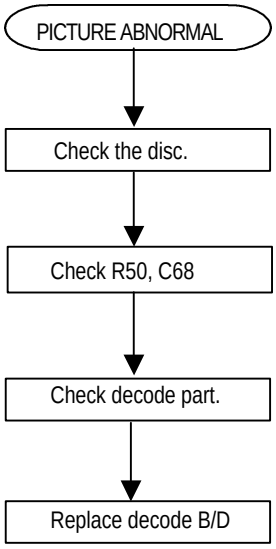
A. Audio abnormal



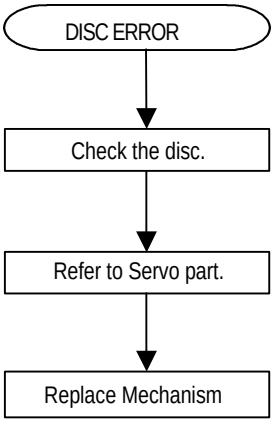
B. Video abnormal



C. PICTURE abnormal



D. DISC ERROR



IC BLOCK DIAGRAMS & SIGNAL DESCRIPTION

1. U5 (V8601VWA DVD DSP)

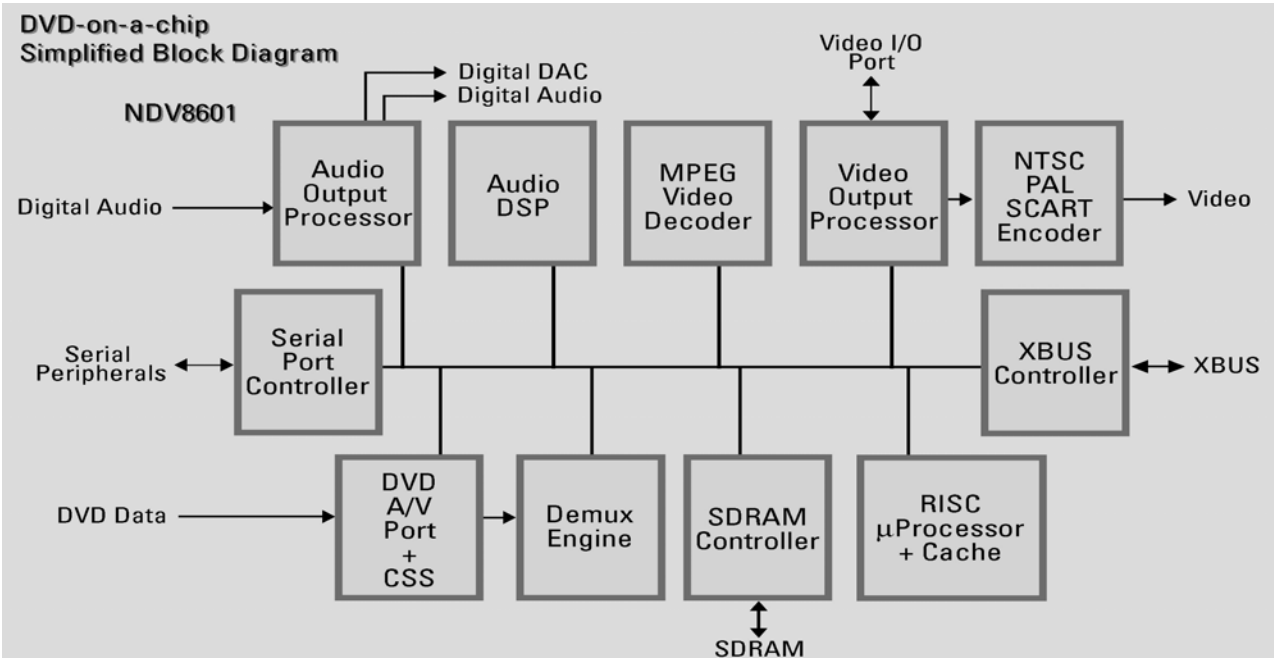
SIGNAL DESCRIPTION

Signal	I/O	Pins	Description
Front End			
DSYNC	I	213	DVD parallel mode Sector Sync
DREQ	O	214	DVD parallel mode Data Request
DCLK	I	215	Data sampling clock
DSTB	I	216	Parallel mode Data Valid, serial mode Left/Right Clock
DVD[7:0]	I	*	DVD drive parallel data port, pins: 217, 219-223, 225, 226
External I/O			
PCS0	O	193	Peripheral chip select 0, generally used for enabling the program store ROM/FLASH
XIO[14:1]	B		Programmable general purpose I/O also used as peripheral chip select, interrupt, PWM output and other system signals, pins: 195, 197-200, 202-203, 205-209, 211
SDRAM			
MD[31:0]	B	*	SDRAM data bus, pins: 227, 229, 231, 232, 234, 235, 236, 238, 239, 240, 2, 3, 5, 7, 8, 9, 43, 45 46, 48, 50, 51, 52, 54, 55, 56, 58, 59, 60, 61, 63, 64
MA[11:0]	O	*	SDRAM address bus, pins: 12, 13, 15, 16, 18, 20, 21, 25, 26, 28, 29, 30
MA[13:12]	O	32-33	SDRAM address bus, reserved for pin compatibility with 64Mbit SDRAM
MCLK	O	22	SDRAM clock
CKE	O	24	SDRAM Clock Enable
CS0-	O	35	SDRAM primary bank chip select
CS1-	O	66	SDRAM extension bank chip select
RAS-	O	37	SDRAM command bit
CAS-	O	38	SDRAM command bit
WE-	O	39	SDRAM command bit
DQM[3:0]-	O	11, 41,42, 65	SDRAM data byte enables
Host Interface			
AD[31:0]	B	*	P multiplexed address/data bus, pins: 136-139, 141-144, 146, 148-153, 155, 157, 158, 163-168, 172-176, 78-180
LA[3:0]	B	184-187	Latched Address [3:0]
ALE	B	183	Address Latch Enable
RD-	B	189	Read
ACK-	B	161	Programmable WAIT-/ACK-/RDY- control
SCLK	O	160	External bus clock used for programmable host bus peripherals
PWE[3:0]-	B	*	Byte write enable for FLASH, EEPROM, SRAM or peripherals, pins: 145, 156, 170, 182
Slave Mode			
LHLD	I	191	Bus Hold Request from external master in slave mode
LHLDA	O	190	Bus Hold Acknowledge in slave mode

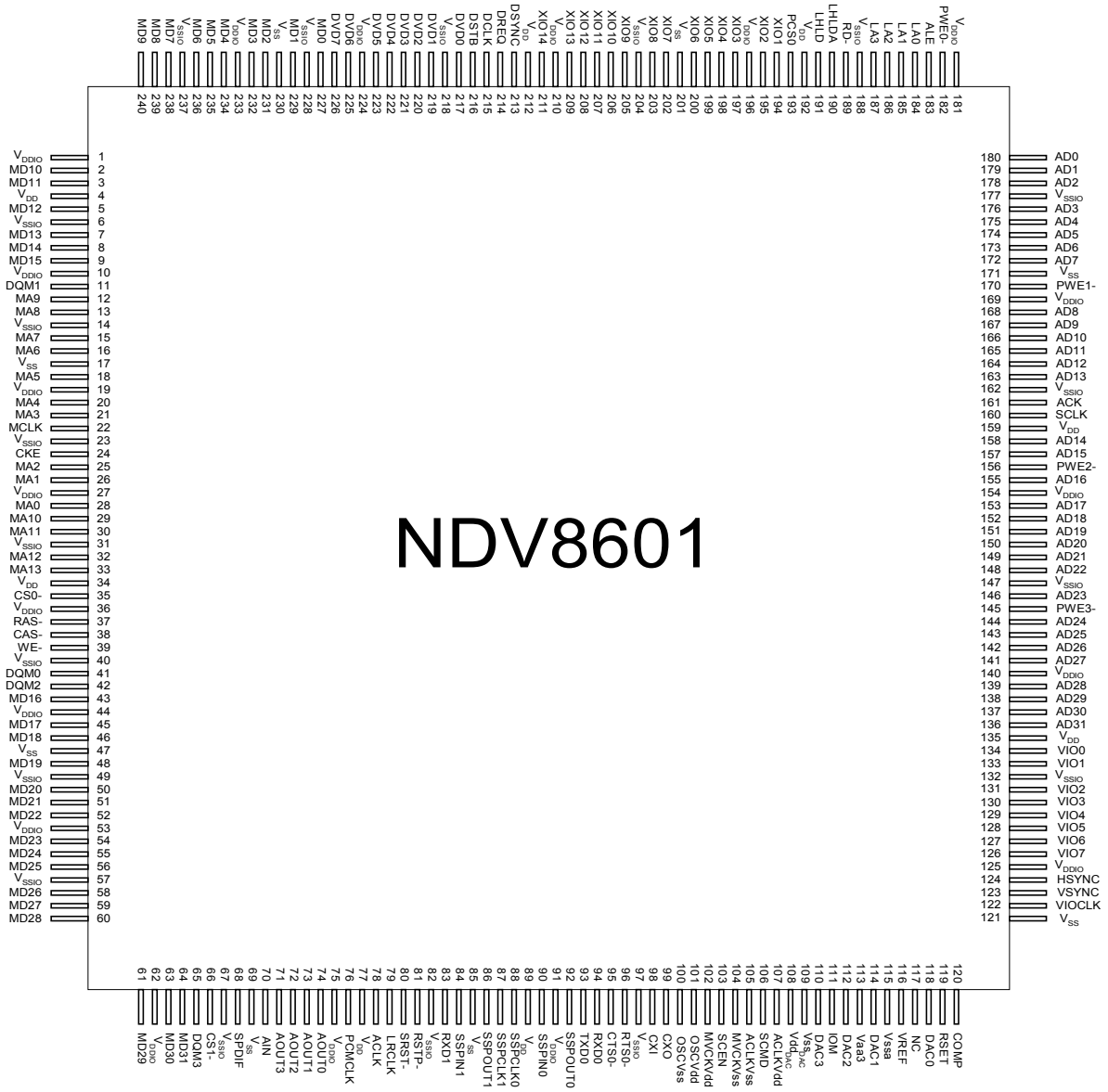
Signal	Type	Pins	Description
Comm Ports			
UART1			
RXD1	I	83	UART1 serial data input from external serial device, used for IR receive / can be used as GPIO
SSP1			
SSPCLK1/CTS1-	B	87	SSP1 clock or UART1 Clear to Send signal / can be used as GPIO
SSPOUT1/DTR1-	B	86	SSP1 data out or UART1 Data Terminal Ready signal / can be used as GPIO
SSPIN1/BAUD1	B	84	SSP1 data in or 16X clock for USART function in UART1 / can be used as GPIO
UART0			
RXD0	I	94	UART0 serial data input from external serial device / can be used as GPIO
TXD0	B	93	UART0 serial data output to an external serial device / can be used as GPIO
RTS0	B	96	UART0 request to send / can be used as GPIO
CTS0	B	95	UART0 Clear to Send signal / can be used as GPIO
SSP0			
SSPOUT0/DTR0	B	92	SSP0 data out or UART0 Data Terminal Ready signal / can be used as GPIO
SSPIN0/BAUD0	B	90	SSP0 data in or 16X clock for USART function in UART0 / can be used as GPIO
SSPCLK0/RTS1	B	88	SSP0 clock or Request To Send function in UART1 / can be used as GPIO
System Interface			
RSTP-	I	81	RESET_Power- from system, used to reset frequency synthesizer & rest of chip
SRST-	O	80	Active low RESET signal for peripheral reset
Video Interface			
DAC0	O	118	Video DAC0 output (Composite video; Chrominance output for S-Video)
DAC1	O	114	Video DAC1 output (Luminance for S-Video and component; G output for SCART)
DAC2	O	112	Video DAC2 output (Chrominance output for NTSC/PAL S-Video; Cb output for component; Blue output for SCART)
DAC3	O	110	Video DAC3 output (A second composite video; Cr output for component; Red output for SCART)
IOM	O	111	Cascaded DAC differential output used to dump current into external resistor for power
VREF	I	116	Input voltage reference (1.2V typ) for output DACs
RSET	O	119	Current setting resistor of output DACs
COMP	O	120	Compensation capacitor connection
Vdd_{DAC}	P	108	DAC Digital Power/1.8V
Vss_{DAC}	P	109	DAC Digital Ground
Vaa3	P	113	DAC Analog Power/3.3V
NC (Vaa)	-	117	Unused (was Vaa = 2.5V on NDV8501 device, can be connected to 1.8V without problem)
Vssa	P	115	DAC Analog Ground

Signal	Type	Pins	Description
Video Port			
VIO[7:0]	B	126-131 133-134	Bidirectional digital video port data bus / can be used as GPIO
HSYNC	B	124	Bidirectional HSYNC signal for devices that do not use EAV/SAV codes / can be used as GPIO
VSYNC	B	123	Bidirectional VSYNC signal for devices that do not use EAV/SAV codes / can be used as GPIO
VIOCLK	B	122	VCLK input/output for Video I/O Port function
Audio Interface			
AOUT0	O	74	Serial audio output data to audio DAC for Left & Right channels / can be used as GPIO
AOUT1	O	73	Serial audio output data to audio DAC for Center & LFE channels / can be used as GPIO
AOUT2	O	72	Serial audio output data to audio DAC for Surround Left & Right channels / can be used as GPIO
AOUT3	O	71	Serial audio output data to audio DAC for Left & Right channels for down-mixed stereo / can be used as GPIO
SPDIF	O	68	S/PDIF digital audio output
ACLK	O	78	Audio interface serial data clock, common clock for DACs & ADC
PCMCLK	O	76	Audio DAC PCM sampling clock frequency, common clock for DACs & ADC / can be used as GPIO
LRCLK	O	79	Left/Right Channel clock, common clock for DACs & ADC
AIN	I	70	Digital audio input for digital micro / can be used as GPIO
Clock Signals			
CXI	I	98	Crystal Input pin for on-chip oscillator or system input clock
CXO	O	99	Crystal Output pin for on-chip oscillator
OSCVdd	P	101	Oscillator Power (1.8V)
OSCVss	P	100	Oscillator Ground
MVCKVdd	P	102	Main & Video Clock PLL Power (3.3V)
MVCKVss	P	104	Main & Video Clock PLL Ground
ACLKVdd	P	107	Audio clock PLL Power (3.3V)
ACLKVss	P	105	Audio clock PLL Ground
Test			
SCEN	I	103	Scan Chain test enable
SCMD	I	106	Scan Chain test mode
PWR & GND			
V_{DD}	P	*	Core Power =1.8V, pins: 4, 34, 77, 89, 135, 159, 192, 212
Vss	P	*	Core & Ring Ground, pins: 17, 47, 69, 85, 121, 171, 201, 230
V_{DDIO}	P	*	I/O Pad power = 3.3V, pins: 1, 10, 19, 27, 36, 44, 53, 62, 75, 91, 125, 140, 154, 169, 181, 196, 210, 224, 233
V_{SSIO}	P	*	I/O Pad ground, pins: 6, 14, 23, 31, 40, 49, 57, 67, 82, 97, 132, 147, 162, 177, 188, 204, 218, 228, 237

BLOCK DIAGRAM



PIN CONNECTIONS



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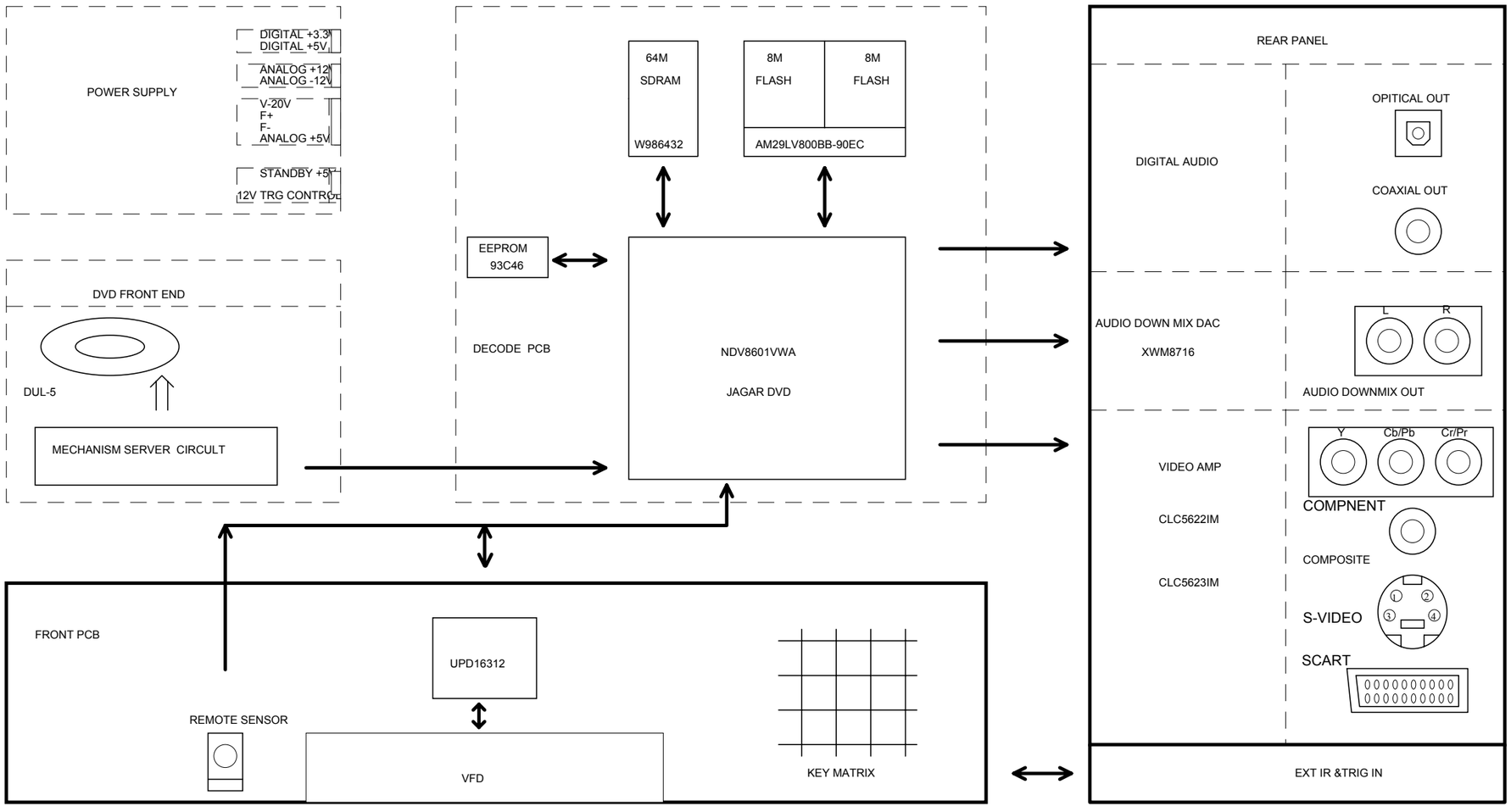
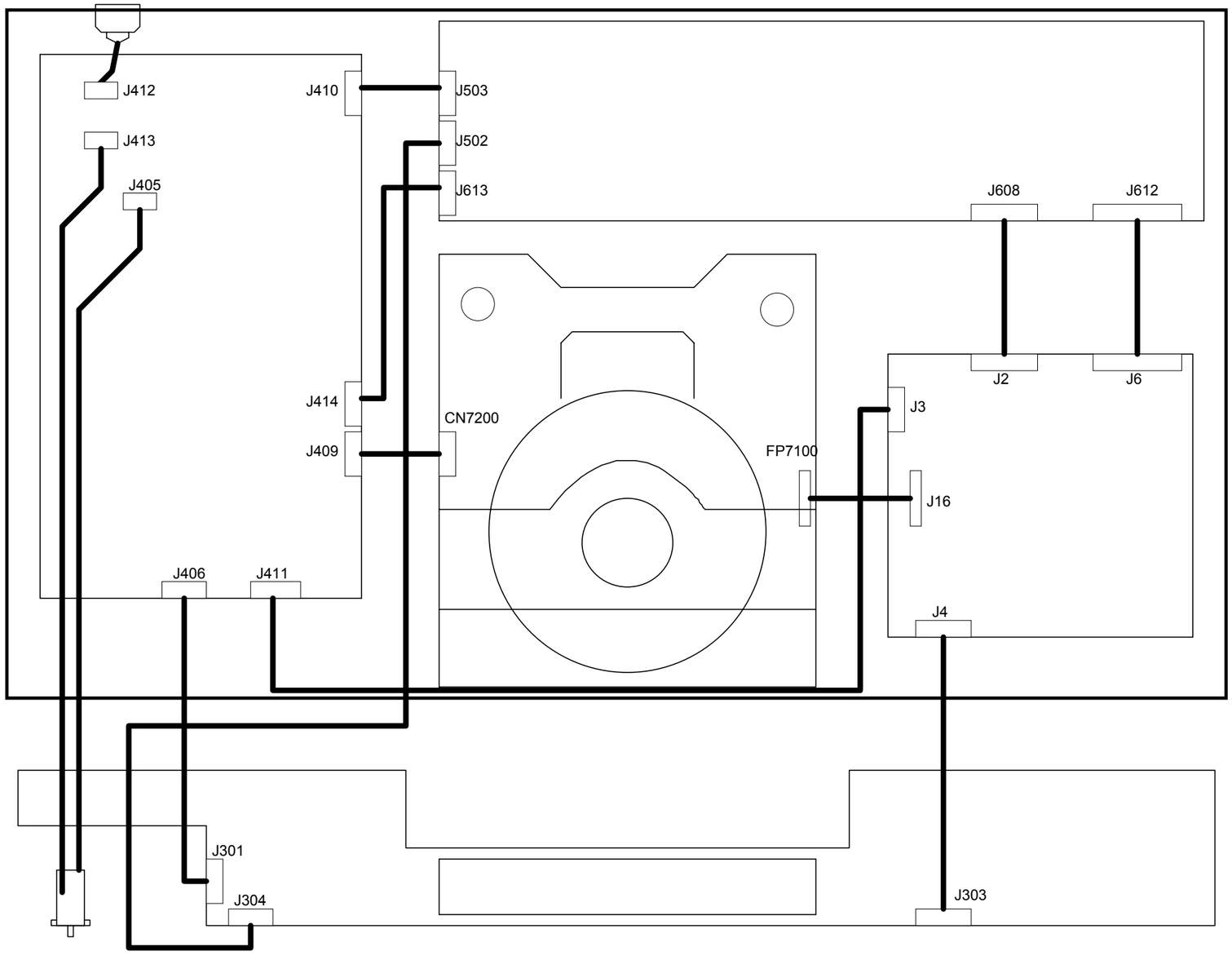
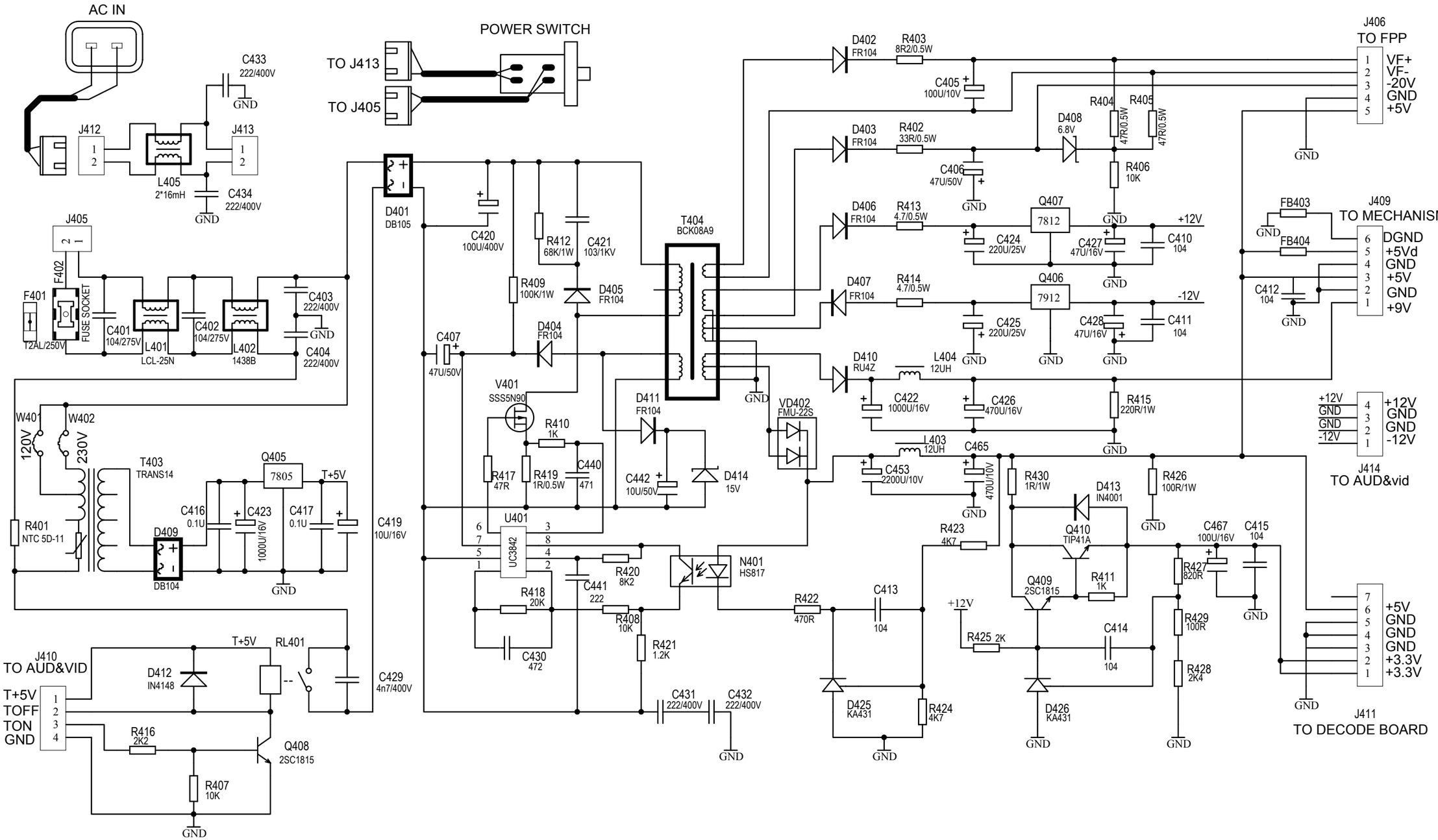


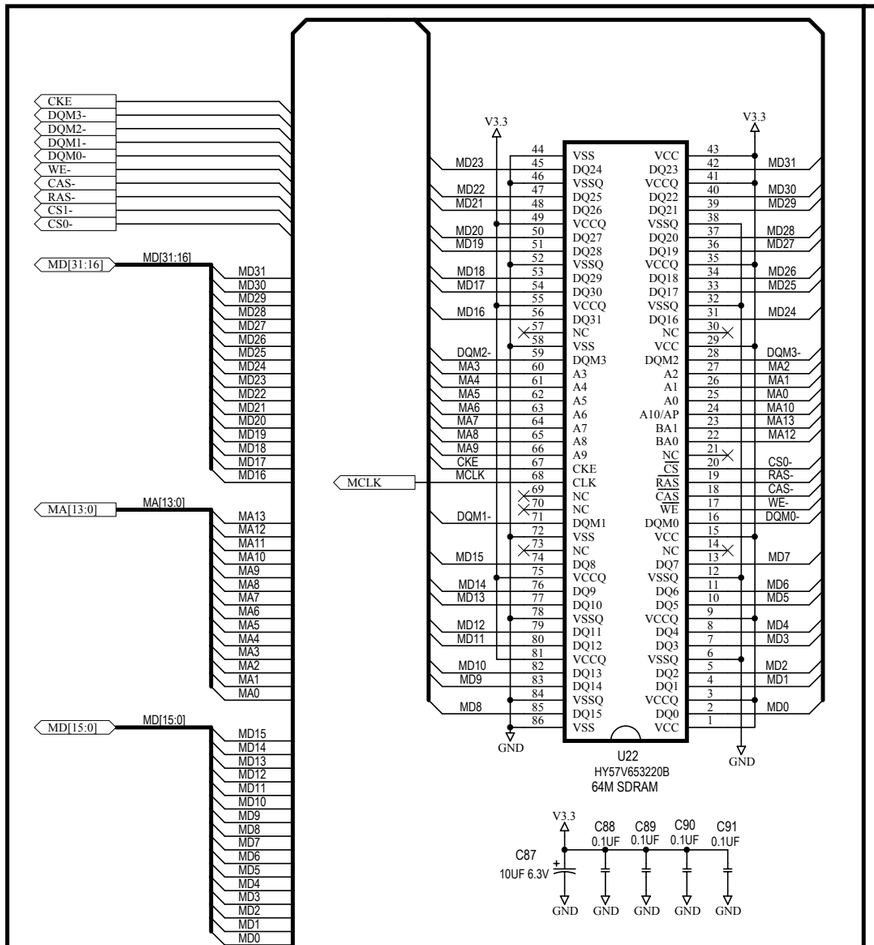
WIRING DIAGRAM

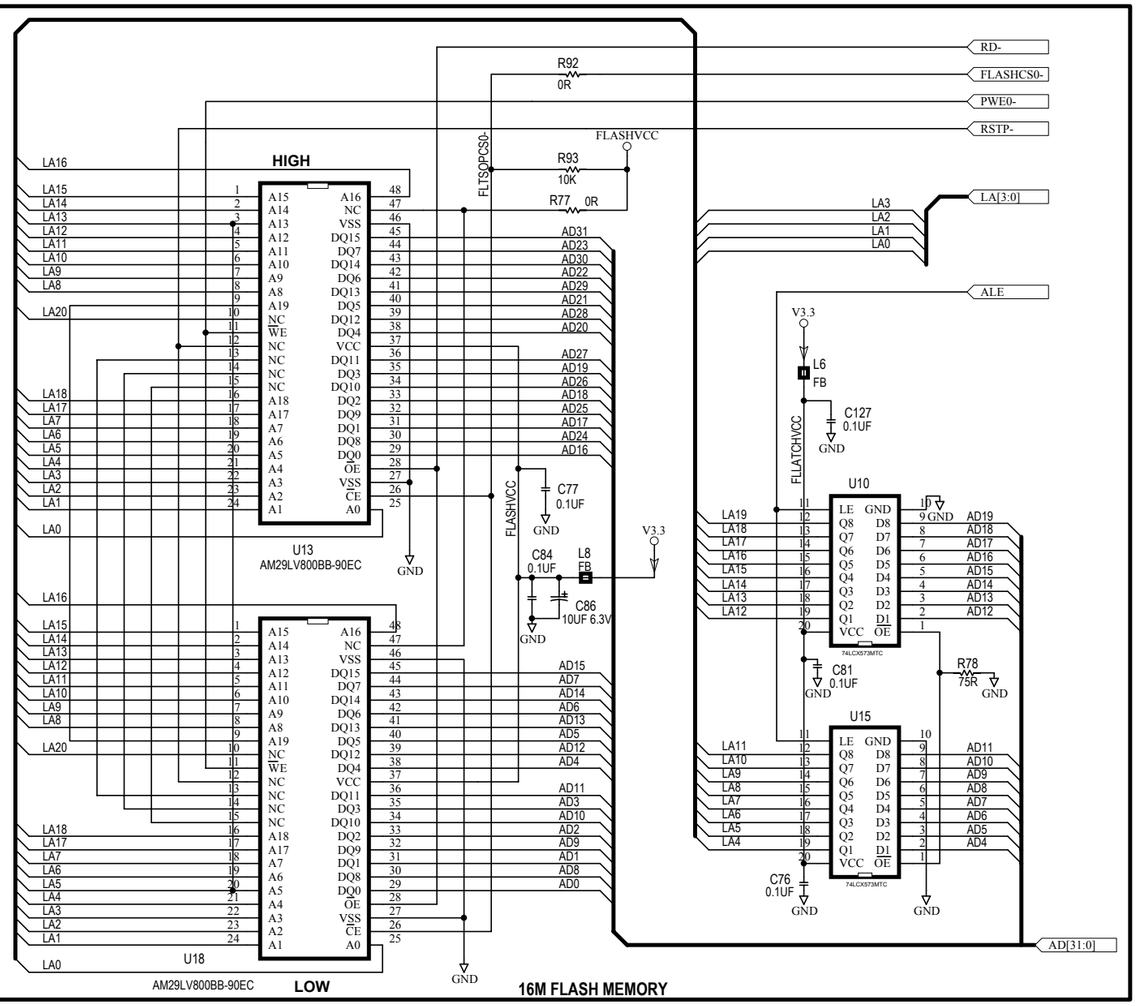


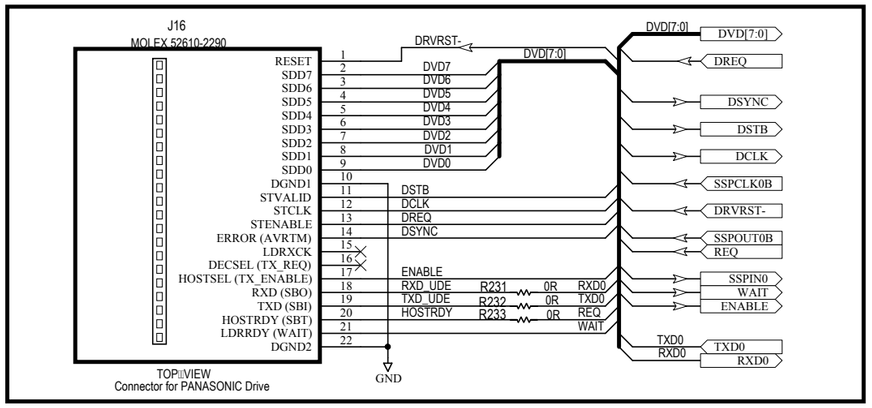
PSU V2.0

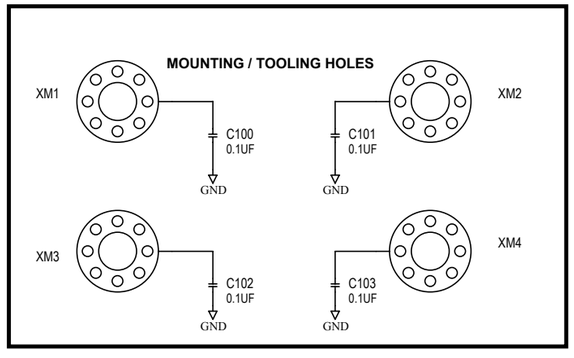

AC IN
POWER SWITCH
TO J413
TO J405
C433
222/400V
GND
J412
J413
L405
2*16mH
C434
222/400V
J405
F402
F401
FUSE SOCKET
T2AL/250V
C401
104/275V
L401
LCL-25N
C402
104/275V
L402
1438B
C403
222/400V
C404
222/400V
W401
W402
120V
230V
T403
TRANS14
R401
NTC 5D-11
D409
DB104
Q405
7805
T+5V
C416
0.1U
C423
1000U/16V
C417
0.1U
C419
10U/16V
GND
D401
DB105
C420
100U/400V
R412
68K/1W
C421
103/1KV
R409
100K/1W
D405
FR104
D404
FR104
C407
47U/50V
V401
SSS5N90
R410
1K
R417
47R
R419
1R/0.5W
C440
471
C442
10U/50V
D414
15V
D411
FR104
U401
UC3842
R420
8K2
C441
222
R418
20K
C430
472
R408
10K
R421
1.2K
N401
HS817
C431
222/400V
C432
222/400V
T404
BCK08A9
D402
FR104
R403
8R2/0.5W
C405
100U/10V
D403
FR104
R402
33R/0.5W
C406
47U/50V
D406
FR104
R413
4.7/0.5W
C424
220U/25V
D407
FR104
R414
4.7/0.5W
C425
220U/25V
D410
RU4Z
L404
12UH
C422
1000U/16V
C426
470U/16V
R415
220R/1W
VD402
FMU-22S
L403
12UH
C453
2200U/10V
C465
470U/10V
D408
6.8V
R404
47R/0.5W
R405
47R/0.5W
R406
10K
Q407
7812
C427
47U/16V
C410
104
Q406
7912
C428
47U/16V
C411
104
R430
1R/1W
D413
IN4001
R426
100R/1W
R423
4K7
Q410
TIP41A
Q409
2SC1815
R411
1K
C467
100U/16V
C415
104
R427
820R
R429
100R
R428
2K4
C414
104
R425 2K
+12V
R422
470R
C413
104
D425
KA431
R424
4K7
D426
KA431
J406
TO FPP
VF+
VF-
-20V
GND
+5V
FB403
FB404
J409
TO MECHANISM
DGND
+5Vd
GND
+5V
GND
+9V
C412
104
+12V
GND
GND
-12V
J414
TO AUD&vid
+12V
GND
GND
GND
+5V
GND
GND
GND
+3.3V
+3.3V
J411
TO DECODE BOARD
J410
TO AUD&VID
T+5V
TOFF
TON
GND
D412
IN4148
RL401
R416
2K2
Q408
2SC1815
R407
10K

MECHANISM AND MEMORY DIAGRAM

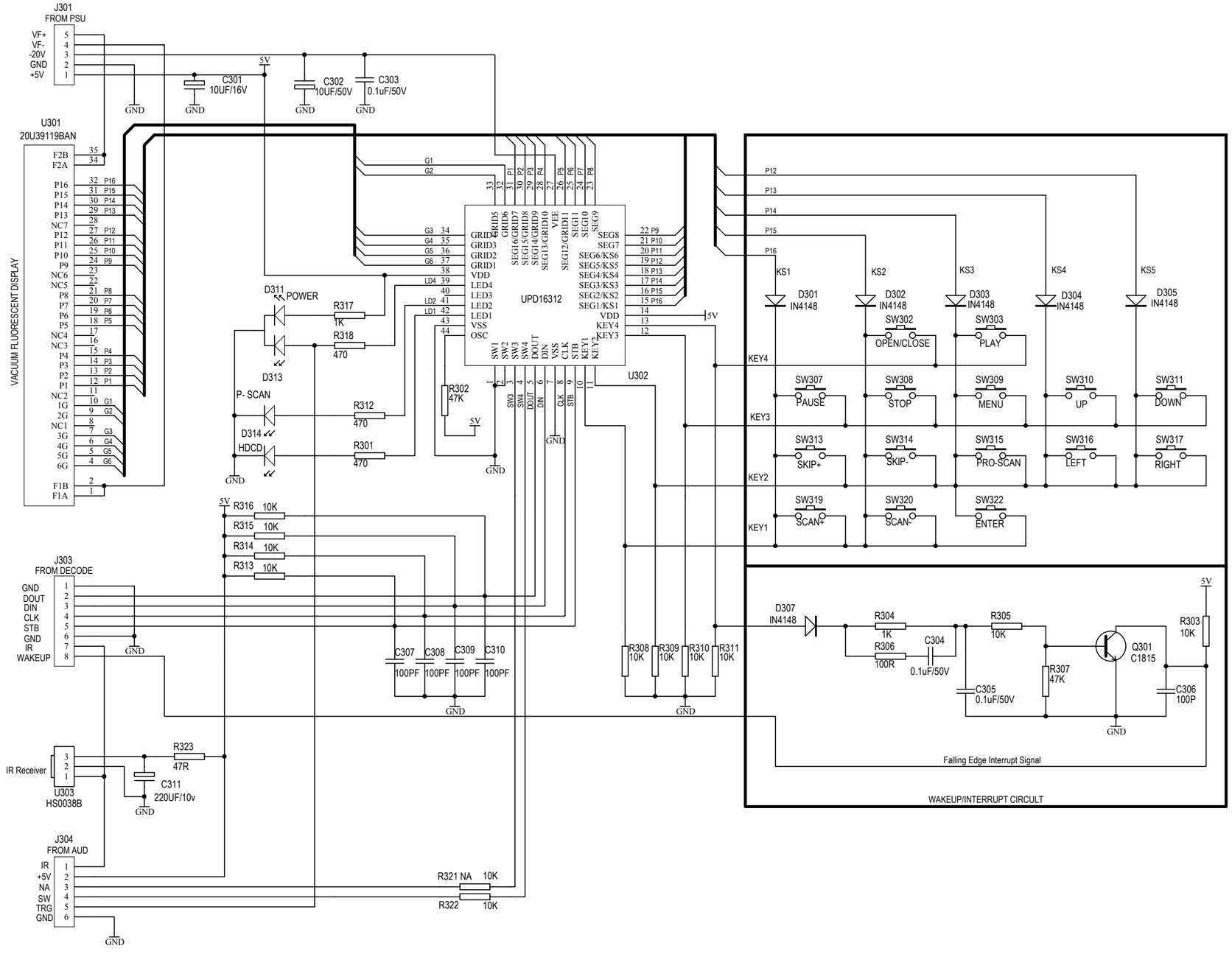




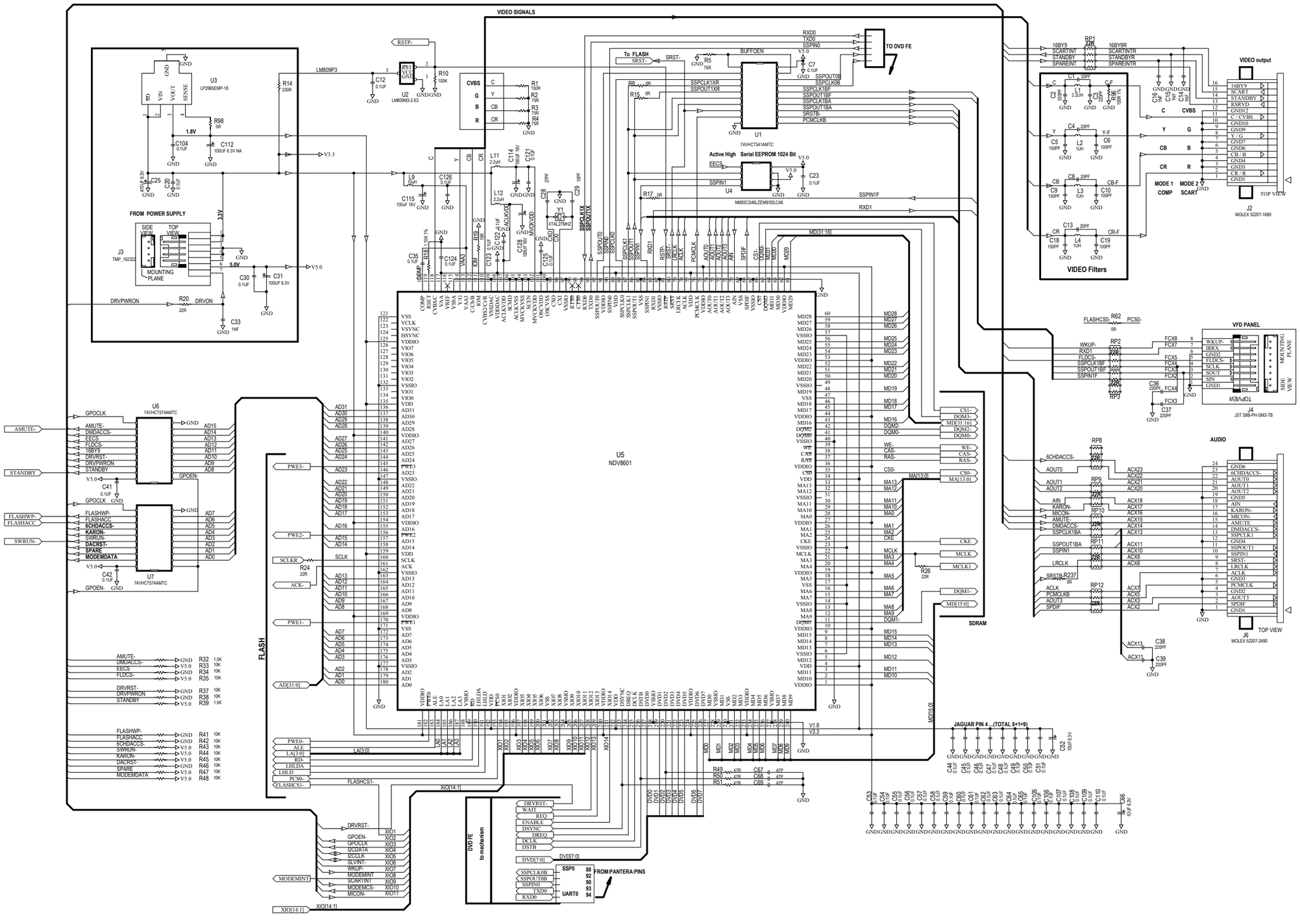




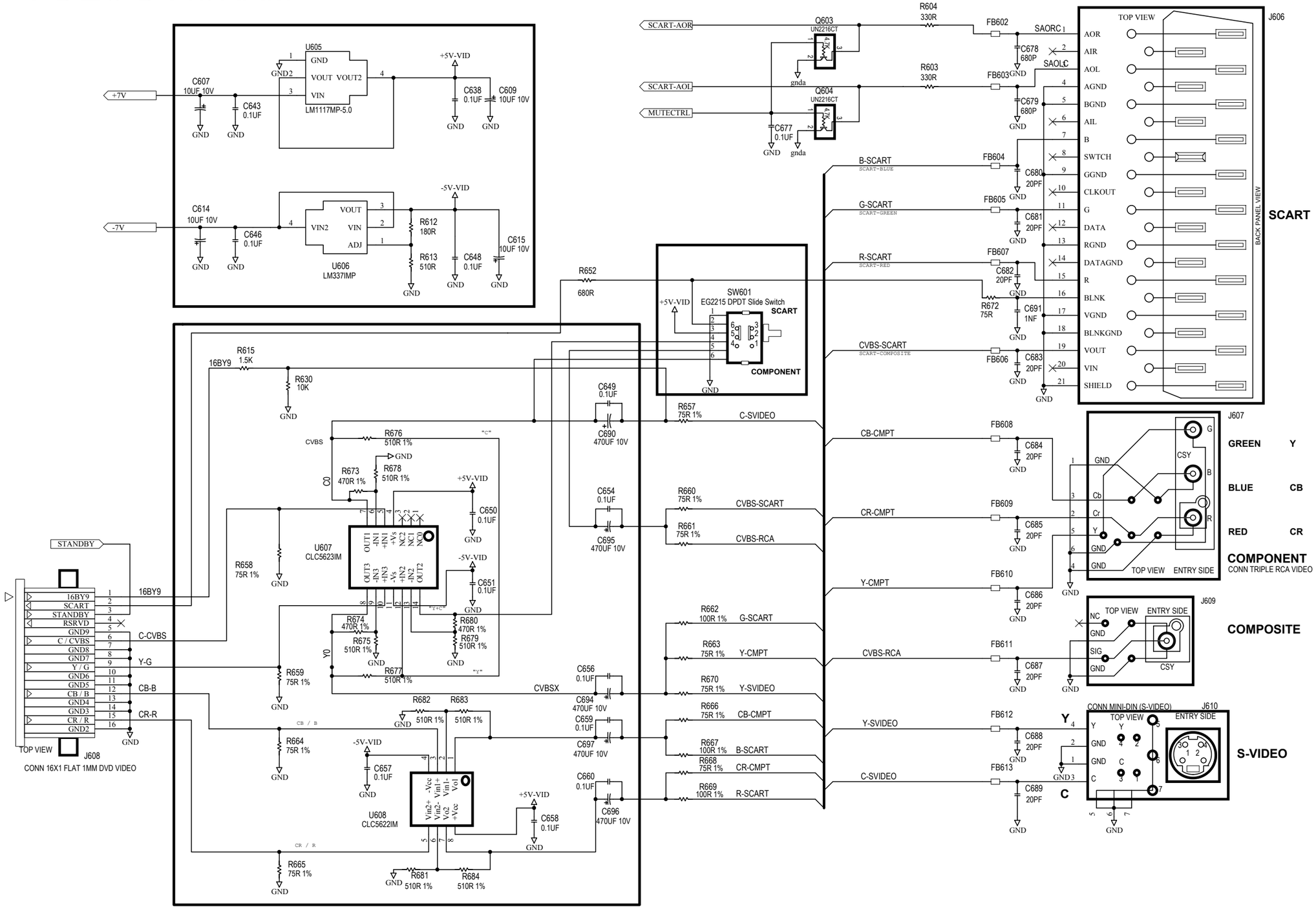
KEYBOARD AND DISPLAY



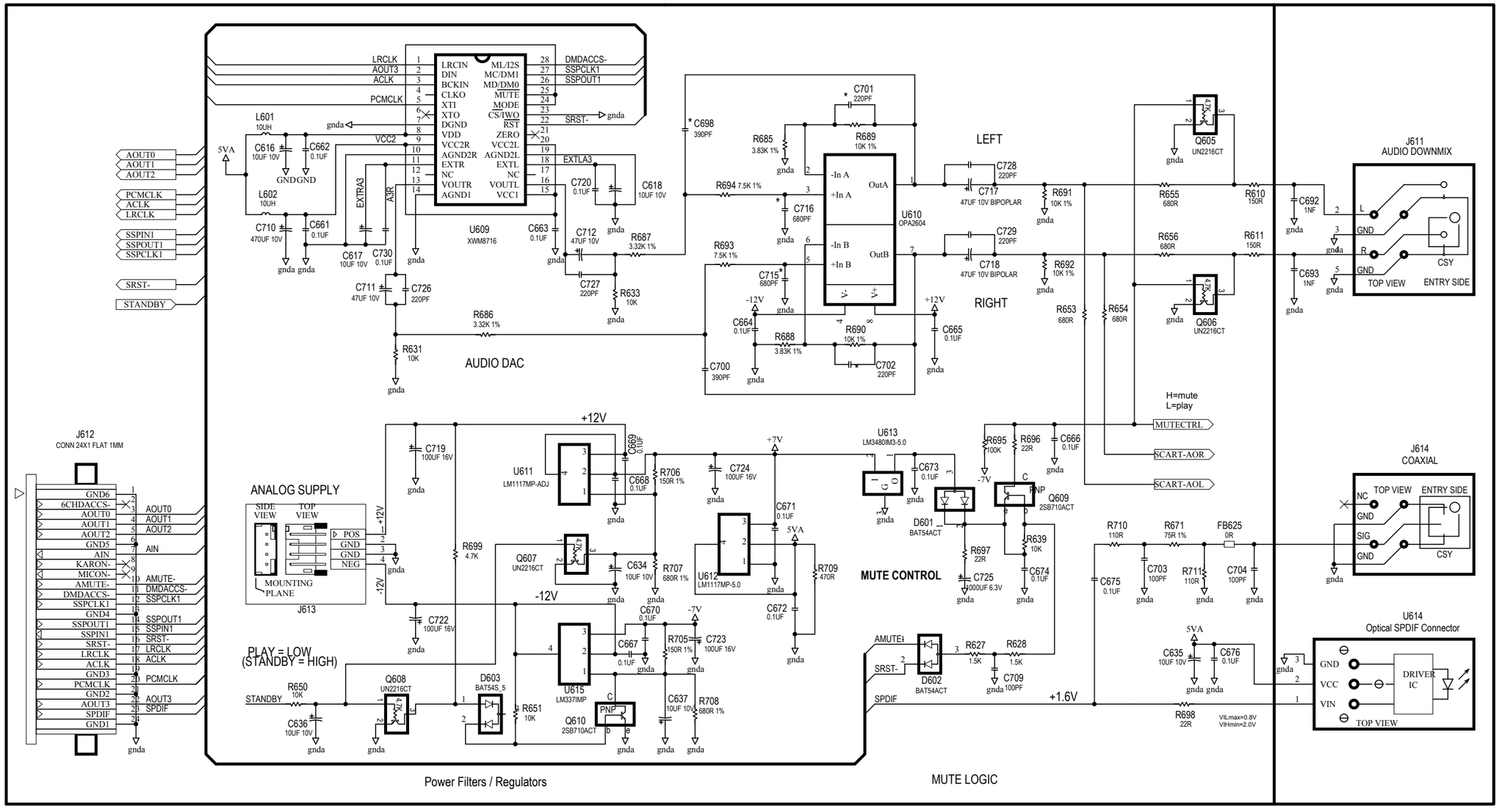
PANTERA V2.0

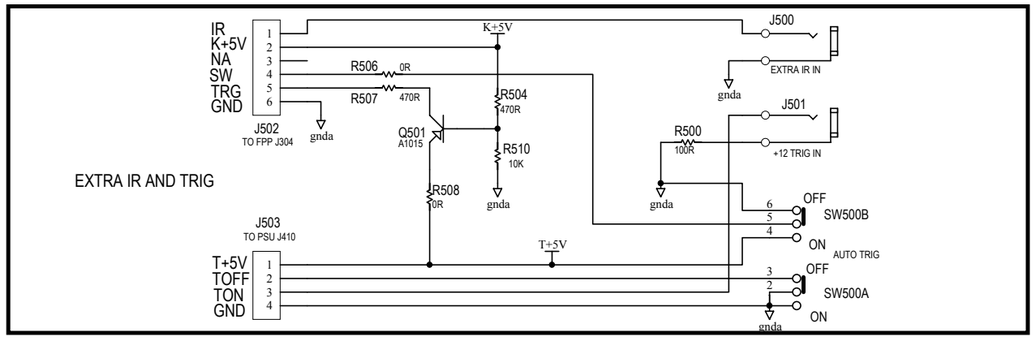

VIDEO SIGNALS
U5
NDV8601
U1
74VHCT541AMTC
U4
NM93CS46LZEMB/93LC46
Active High Serial EEPROM 1024 Bit
U2
LM809M3-2.63
U3
LP3965EMP-18
U6
74VHCT574AMTC
U7
74VHCT574AMTC
U8
74VHCT574AMTC
TO DVD FE
FROM POWER SUPPLY
VIDEO output
VIDEO Filters
TOP VIEW
MOLEX 52207-1690
VFD PANEL
JST S8B-PH-SM3-TB
AUDIO
MOLEX 52207-2490
SDRAM
FLASH
DVD FE
to mechanism
FROM PANTERA PINS
JAGUAR PIN 4 - (TOTAL 8*1=9)
MODE 1 COMP
MODE 2 SCART
SIDE VIEW
MOUNTING PLANE
RSTP-
LM809P3
BUFFOEN
To FLASH
SRST-
Y1
XTAL27MHz
J3
TMP_162322
J2
J4
J6
RP1
RP2
RP3
RP8
RP9
RP10
RP11
RP12
FLASHCS0-
PCS0-
0R
22R
1.8V
3.3V
5.0V
V1.8
V3.3
V5.0
GND
SSPIN1F
RXD1
MD[31:16]
MD[15:0]
MA[13:0]
CS1-
DQM3-
DQM2-
DQM0-
WE-
CAS-
RAS-
CS0-
CKE
MCLK
MCLK1
DQM1-
AD[31:0]
XIO[14:1]
LA[3:0]
FLASHCS1-
MODEMINT
DRVRST-
WAIT
REQ
ENABLE
DSYNC
DREQ
DCLK
DSTB
DVD[7:0]
SSP0
UART0
SSPCLK0B
SSPOUT0B
SSPIN0
TXD0
RXD0
16BY9
SCARTINT
STANDBY
SPAREINT
16BY9R
SCARTINTR
STANDBYR
SPAREINTR
C
CVBS
Y
G
CB
B
CR
R
Y-F
CB-F
CR-F
C / CVBS
Y / G
CB / B
CR / R
GND1
GND2
GND3
GND4
GND5
GND6
GND7
GND9
GND10
GND12
RSEVD
WKUP-
IRRX
FLDCS-
SCLK
SOUT
SIN
FCX2
FCX3
FCX4
FCX5
FCX7
FCX8
6CHDACCS-
AOUT0
AOUT1
AOUT2
AIN
KARON-
MICON-
AMUTE-
DMDACCS-
SSPCLK1BA
SSPOUT1BA
SSPIN1
LRCLK
ACLK
PCMCLKB
AOUT3
SPDIF
ACX2
ACX3
ACX5
ACX7
ACX8
ACX9
ACX10
ACX11
ACX12
ACX13
ACX14
ACX15
ACX16
ACX17
ACX18
ACX20
ACX21
ACX22
ACX23
SRSTB-
SSPOUT1
SRST-
ACLK
GND3
GND2
GND1
AMUTE-
DMDACCS-
EECS
FLDCS-
DRVRST-
DRVPWRON
STANDBY
FLASHWP-
FLASHACC
6CHDACCS-
SWRUN-
KARON-
DACRST-
SPARE
MODEMDATA
GPOCLK
GPOEN-
SCLKR
ACK-
ALE
RD-
LHLDA
LHLD
PCS0-
FLASHCS1-
PWE3-
PWE2-
PWE1-
PWE0-
SCLK
DRVPWRON
DRVON
SWRUN-
FLASHWP-
FLASHACC
STANDBY
AMUTE-
GPOEN-
GPOCLK
R1 150R
R2 75R
R3 75R
R4 75R
R5 75R
R10 100K
R14 330R
R15 0R
R17 0R
R18 10K 1%
R20 22R
R24 22R
R26 22R
R62 0R
R98 0R
R237 0R
C7 0.1UF
C23 0.1UF
C30 0.1UF
C31 100UF 6.3V
C33 1NF
C35 0.1UF
C41 0.1UF
C42 0.1UF
C52 100UF 6.3V
C104 0.1UF
C112 100UF 6.3V NA
C114 100UF 16V
C115 100UF 16V
C121 0.1UF
C122 0.1UF
C123 0.1UF
C124 0.1UF
C125 0.1UF
C126 0.1UF
C128 100UF 16V
L9 20uH
L11 2.2uH
L12 2.2uH
R32 1.5K
R33 10K
R34 10K
R35 10K
R37 10K
R38 10K
R39 1.5K
R41 10K
R42 10K
R43 10K
R44 10K
R45 10K
R46 10K
R47 10K
R48 10K
R49 47R
R50 47R
R51 47R
C67 47P
C68 47P
C69 47P

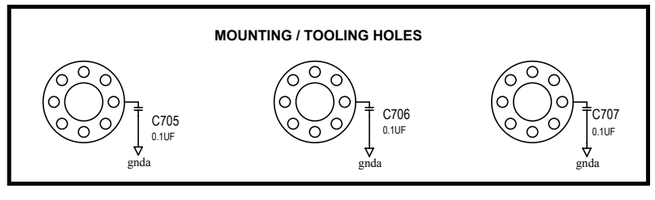
VIDEO DIAGRAM



AUDIO DIAGRAM

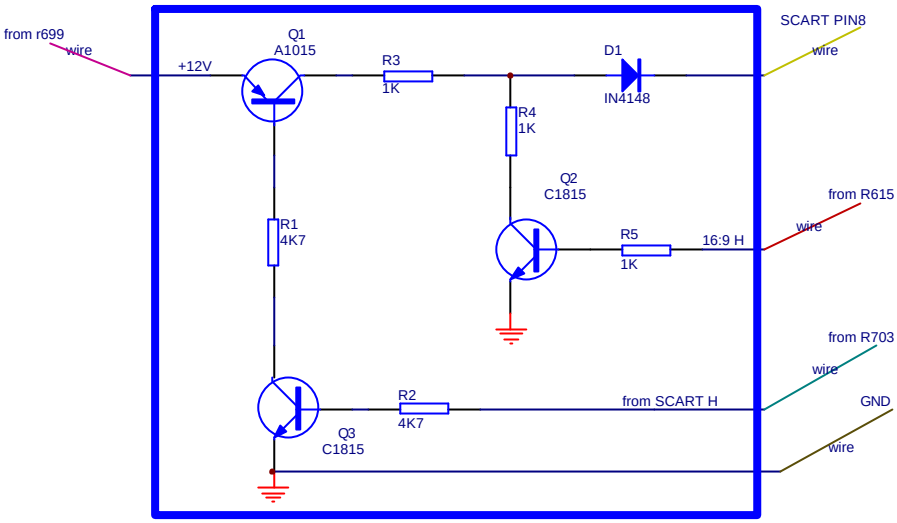




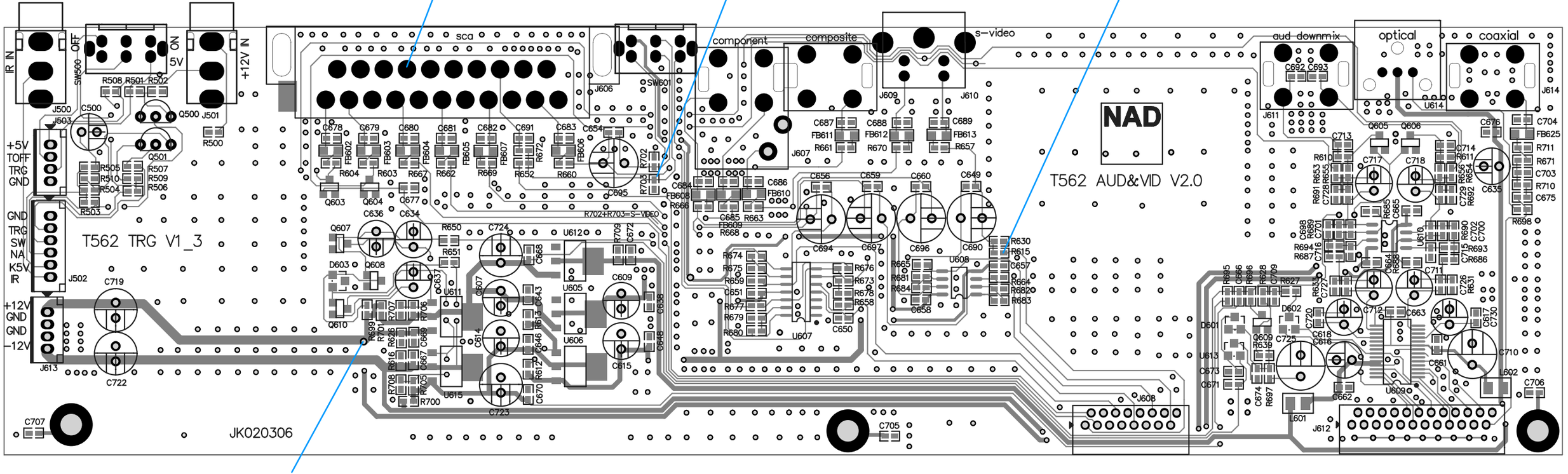


ADDENDUM

8 PIN SCART MODIFICATON



PCB LAYOUT (AUD TOP SIDE)



SERVICE MANUAL

T 562

DVD / VCD / CD PLAYER

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CANADA